

CIVIL CONSTRUCTION DRAWINGS FOR BRANNEN POND ROAD

BRANNEN POND ROAD, BROOKLET, GEORGIA 30415

Sheet Index Table	
Sheet Number	Sheet Title
C0-00	COVER SHEET
C0-01	GENERAL NOTES
C0-10	EXISTING CONDITIONS PLAN
C1-00	DEMOLITION PLAN
C2-00	SITE PLAN
C3-00	GRADING & DRAINAGE PLAN
C3-10	STORM SEWER PROFILES
C4-00	CONSTRUCTION DETAILS
C4-01	CONSTRUCTION DETAILS
C4-02	CONSTRUCTION DETAILS
C4-03	CONSTRUCTION DETAILS
C4-04	CONSTRUCTION DETAILS
C4-05	CONSTRUCTION DETAILS
C4-06	CONSTRUCTION DETAILS
C4-07	CONSTRUCTION DETAILS
C5-00	EROSION CONTROL NOTES
C5-01	EROSION CONTROL NOTES
C5-02	EROSION CONTROL NOTES
C5-03	EROSION CONTROL NOTES
C5-04	EROSION CONTROL NOTES
C5-05	EROSION CONTROL NOTES
C5-10	EROSION CONTROL PLAN PHASE 1
C5-20	EROSION CONTROL PLAN PHASE 2
C5-30	EROSION CONTROL PLAN PHASE 3
C5-80	EROSION CONTROL DETAILS
C5-81	EROSION CONTROL DETAILS



12TH DISTRICT
BULLOCH COUNTY, GEORGIA

PROPERTY AREA = 0.55 ACRES
TOTAL DISTURBED AREA = 0.55ACRES
IMPERVIOUS AREA = 0.5 ACRES (90%)
PERVIOUS AREA = 0.05 ACRES (10%)

BULLOCH COUNTY CASE #: TBD

PROJECT NARRATIVE:

THE BRANNEN POND ROAD PROJECT IS A PROPOSED CULVERT REPLACEMENT AND ROADWAY IMPROVEMENT PROJECT LOCATED AT BRANNEN POND ROAD. THE PROJECT WILL IMPLEMENT DUAL CONCRETE BOX CULVERTS TO INCREASE THE CAPACITY OF THE CULVERT CROSSING AND REDUCE FLOODING OVER THE ROADWAY. OF THE CULVERT CROSSING AND INCREASE STABILITY OF THE ROADWAY AND SHOULDERS.

THE PROJECT WILL ALSO INCLUDE REPAIRS TO THE DOWNSTREAM ROADWAY SHOULDER THAT HAS ERODED AWAY DURING HURRICANE IDALIA. THE UPSIZED CULVERT WILL PREVENT FURTHER EROSION OF THE SHOULDER. THE DISTURBED AREA ON SITE IS 0.55 ACRES, AND THE TOTAL DISTURBED AREA IS 0.55 ACRES.

FEMA MAP

THE PROJECT SITE DOES LIE WITHIN A FLOOD HAZARD AREA PER FIRM PANEL 13031C0335D DATED 08/05/2010.SHOWN ON SHEET C5-00

NOTES:

- ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING THE REPRODUCTION PROCESS. THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.
- IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
- THE APPROVAL OF THESE PLANS AND THE ISSUANCE OF THIS LAND DISTURBANCE PERMIT DOES NOT IN ANY WAY SUGGEST THAT ALL OTHER REQUIREMENTS FOR THE LEGAL OR APPROPRIATE OPERATIONS FOR THIS ACTIVITY, WHICH MAY REQUIRE ADDITIONAL PERMITTING HAVE BEEN MET. THE ONUS IS ON THE OWNER/DEVELOPER/ BUILDER TO DISCOVER WHAT ADDITIONAL PERMITTING OR APPROVALS MAY BE NECESSARY TO OPERATE FROM THIS POINT IN AN APPROPRIATE AND LEGAL MANNER. PLAN APPROVAL OR PERMIT ISSUANCE DOES NOT ABSOLVE THE APPLICANT FROM COMPLYING WITH ALL APPLICABLE LAWS, STANDARDS, OR OTHER PERMITS WHICH MAY BE REQUIRED FOR THIS PROJECT.



PROJECT CONTACTS

OWNER: BULLOCH COUNTY
115 NORTH MAIN STREET
STATESBORO, GEORGIA 30458
PHONE: 912.531.5708
CONTACT: RON NELSON

CIVIL ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.
1200 PEACHTREE STREET NE, SUITE 800
ATLANTA, GA 30309
PHONE: 470.763.6475
CONTACT: ERIC BYRNE, PE

SURVEYOR: JAMES M. ANDERSON AND ASSOCIATES
104 OAK STREET,
STATESBORO, GA 30458
PHONE: 912.764.2002
CONTACT: MATT ANDERSON

24-HR CONTACT: RON NELSON
BULLOCH COUNTY
912.531.5708

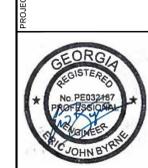
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1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE: (404) 418-8700
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	10% CONSTRUCTION DOCUMENTS	05/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT



GSWCC CERT. (LEVEL II) 00000068887
DRAWN BY: NF
DESIGNED BY: PB
REVIEWED BY: EB
DATE: 07/05/2024
PROJECT NO.: 017983000

COVER SHEET

SHEET NUMBER
C0-00

final : FOR CONSTRUCTION

CONTRACTOR REQUIREMENTS:

- 1. ALL WORK REQUIRED BY THIS PROJECT, INCLUDING CONSTRUCTION METHODS AND ACTIVITIES, LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS SHALL BE PERFORMED PER THE CONTRACT DOCUMENTS UNLESS OTHERWISE NOTED. WORK SHALL INCLUDE EROSION CONTROL MANAGEMENT, GRADING, STRUCTURES, AND PLANTINGS.

SURVEY INFORMATION:

- 1. TOPOGRAPHIC DATA SHOWN ON THESE PLANS IS FOR THE INFORMATION OF THE CONTRACTOR. THE CONTRACTOR SHALL MAKE SUCH ADDITIONAL INVESTIGATIONS AS REQUIRED TO ACQUAINT THEMSELVES ADEQUATELY WITH THE SITE'S TOPOGRAPHY AND SUBSURFACE CONDITIONS FOR THE PREPARATION OF HIS BID AND FOR THE SUCCESSFUL EXECUTION OF THEIR WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEY REQUIREMENTS OF THIS PROJECT AND SHALL USE A GEORGIA LICENSED LAND SURVEYOR. THE BASE SURVEY INFORMATION FOR THIS SITE WAS PERFORMED BY JAMES M. ANDERSON AND ASSOCIATES ON 04/04/2024
3. SURVEY HORIZONTAL AND VERTICAL CONTROL BASED ON GEORGIA STATE PLANE EAST NAD83 AND NAVD 88. ALL STATIONING AND DISTANCES INDICATED ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS.
4. SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF GEORGIA. PRIOR TO DISTURBANCE, CONTACT MONUMENT OWNER TO VERIFY LOCATION OF EXISTING MONUMENT.

PERMITTING NOTES:

- 1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ADHERING TO ALL PERMITS AS REQUIRED, AND SHALL MAKE ALL NOTIFICATIONS AS REQUIRED. CONTRACTOR SHALL COORDINATE WITH ENGINEER AND OWNER PRIOR TO STARTING WORK.

STORMWATER NOTES:

- 1. FLOODPLAINS ARE ON THE SITE AS SHOWN FROM FIRM NUMBER 13031C0335D DATED 08/05/2010.
2. THE PROPOSED PROJECT DISTURBS LESS THAN ONE ACRE AND ADDS NO IMPERVIOUS AREA, STORM WATER MANAGEMENT FOR THIS PROJECT IS NOT NEEDED.
3. WETLAND CERTIFICATION: THE DESIGN PROFESSIONAL, WHOSE SEAL APPEARS HEREON, CERTIFIES THE FOLLOWING:
A. THE NATIONAL WETLAND INVENTORY MAPS HAVE BEEN CONSULTED, AND,
B. THE US ARMY CORP OF ENGINEERS WAS CONSULTED, REGARDING THE NATURE OF THE PROJECT. THIS PROJECT WILL FALL UNDER A NATIONWIDE PERMIT 3A (SECTION 404). THERE ARE NO WETLANDS DISTURBED ON SITE, HOWEVER, THE STREAM BUFFER WILL BE ENCRACHEED UPON TO REPLACE THE EXISTING CULVERT.
C. THE PROJECT DOES NOT REQUIRE A GAEPD STREAM BUFFER VARIANCE BECAUSE THE PROJECT CONSISTS OF REPLACING AN EXISTING CULVERT WHERE THE CORSSING IS PERPENDICULAR TO THE STREAM CHANNEL.
4. MAXIMUM SLOPE FOR CUT OR FILL IS 2H:1V.
5. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY LAND DISTURBING ACTIVITIES WITHIN WETLAND AREAS.

UTILITY NOTES:

- 1. THE EXISTING UTILITIES SHOWN AND INDICATED ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR DISRUPTION OF UTILITY SERVICE DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UTILITIES PROTECTION CENTER IN METRO ATLANTA OR THROUGHOUT GEORGIA (811) AND/OR OWNERS OF THE UTILITIES TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. CONTRACTOR IS TO MAINTAIN CONTINUOUS UTILITY SERVICES TO ALL LOCATIONS IN THE PROJECT AREA.
3. THE CONTRACTOR SHALL PROVIDE ACCESS TO UTILITY COMPANIES FOR MAINTENANCE AND WORK ON THEIR UTILITIES DURING THE COURSE OF CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES WHOSE LINES ARE WITHIN THE PROJECT AREA, PRIOR TO CONSTRUCTION, AND SHALL COORDINATE ANY RELOCATION OF THE EXISTING UTILITIES, UNLESS OTHERWISE SPECIFIED ON THE PLANS. ANY CONFLICTS WITH THE EXISTING UTILITIES WHICH ARE NOT NOTED ON THE PLANS SHALL BE RESOLVED BETWEEN THE CONTRACTOR AND THE RESPECTIVE UTILITY COMPANY AT NO COST TO THE OWNER. ALL SUCH RELOCATIONS SHALL BE NOTED ON THE AS-BUILT DRAWINGS.
5. BEFORE BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY CONTRACTOR'S OPERATIONS AND/OR RELATED WORK OF THE CONTRACTOR OR THEIR AGENT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO DAMAGED UTILITIES AT THEIR OWN EXPENSE. CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER AND THE OWNER FOR ANY INCONVENIENCE OR DELAY CAUSED BY THE OPERATIONS OF OTHERS IN PERFORMING THE ABOVE WORK. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH OTHERS TO PROVIDE SATISFACTORY PROGRESS IN THE PROJECT AREA.
6. UTILITY LATERALS ARE SPECIFICALLY EXCLUDED FROM THESE DRAWINGS. THESE UTILITY LATERALS INCLUDE BURIED WATER, SEWER, GAS, ELECTRIC, TELEVISION AND TELEPHONE SERVICES, STREET LIGHTING AND TRAFFIC LOOP DETECTORS. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL SUCH FACILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL SUCH FACILITIES THAT ARE DAMAGED DURING CONSTRUCTION. PAYMENT FOR LOCATING, PROTECTING, COORDINATING, AND REPAIRING EXISTING FACILITIES WILL BE INCLUDED IN OTHER ITEMS OF WORK AND NO ADDITIONAL COMPENSATION WILL BE MADE THEREFORE. ALL REPAIRS SHALL BE MADE IN ACCORDANCE WITH STANDARDS AND REQUIREMENTS OF THE UTILITY OWNER. UTILITY SUPPORT METHODS SHALL BE SUBMITTED TO ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL.

VEGETATION DISTURBANCE:

- 1. TREES SHALL NOT BE DAMAGED OR REMOVED UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR APPROVED IN WRITING BY ENGINEER AND OWNER. LANDSCAPING NOT DESIGNATED FOR REMOVAL THAT IS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED WITH THE SAME VARIETIES AND AGE OF EXISTING LANDSCAPE VEGETATION AND PLANTS. THE CONTRACTOR SHALL NOT DISTURB AND SHALL PROTECT ALL TREES AND SHRUBS OUTSIDE OF CONSTRUCTION LIMITS, IN ADDITION TO THOSE THAT RECEIVE ORANGE BARRIER FENCE INSIDE PROJECT LIMITS.
2. THE CONTRACTOR SHALL CONDUCT OPERATIONS IN SUCH A MANNER AS TO PREVENT INJURY TO EXISTING VEGETATION THAT IS TO REMAIN GROWING. IF ANY INJURIES TO VEGETATION OCCUR, BROKEN BRANCHES SHALL BE REMOVED AND ROUGH EDGES AND SCARRED LIMBS SHALL BE SHAPED, MADE SMOOTH, AND OTHERWISE REPAIRED. ANY VEGETATION THAT IS DAMAGED TO SUCH AN EXTENT AS TO DESTROY THEIR VALUE FOR LANDSCAPE PURPOSES SHALL BE REMOVED, DISPOSED OF, AND REPLACED BY THE CONTRACTOR AT THEIR OWN EXPENSE. GRASS OR GROUND COVER THAT IS DAMAGED SHALL BE SEEDED AND MULCHED AND/OR SODDED TO MATCH EXISTING AGE AND SPECIES BY THE CONTRACTOR AT HIS OWN EXPENSE.
3. CONSTRUCTION DEBRIS AND TREES THAT HAVE BEEN DAMAGED OR FELLED SHALL BE REMOVED OFF SITE BY THE CONTRACTOR.
4. ALL WASTE, SEDIMENT, DEBRIS, BRUSH, DISCARDED MATERIALS, AND RUBBISH SHALL BE HAULED OFF THE PROJECT SITE NO LESS THAN ONCE PER WEEK. EXISTING SITE MAY CONTAIN RUBBISH THAT SHALL BE REMOVED PRIOR TO SITE GRADING. ANY MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A LAWFUL MANNER AT STATE, CITY, OR COUNTY APPROVED AND PERMITTED DISPOSAL SITE(S).
5. NON-VEGETATIVE MATERIAL IS TO BE REMOVED MANUALLY.
6. A COMMERCIAL APPLICATOR LICENSE AND A PESTICIDE CONTRACTOR LICENSE ARE REQUIRED BY THE CONTRACTOR IF THE USE OF HERBICIDES ARE NECESSARY FOR NOXIOUS PLANT MATERIAL REMOVAL.

JOB SITE CONDITIONS:

- 1. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
2. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE WORK SITE AGAINST TRESPASSING, VANDALISM, DUMPING, AND THEFT.
3. CONTRACTOR SHALL MAINTAIN STORM DRAINAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE TO AND THROUGH EXISTING DRAINAGE FACILITIES FROM ALL DISTURBED AREAS BOTH DURING AND AT THE COMPLETION OF THE PROJECT.
4. NO SUITABLE STAGING AREA LOCATION IS SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR SECURING A STAGING AREA FOR EQUIPMENT AND MATERIAL STORAGE.
5. THE CONTRACTOR'S ACTIVITIES SHALL OCCUR ONLY WITHIN THE CONSTRUCTION LIMITS.
6. THE CONTRACTOR SHALL NOT ACCESS THE WORK FOR THIS PROJECT EXCEPT OVER ROUTES AT SPECIFIC ACCESS POINTS THAT ARE AGREED UPON IN WRITING BETWEEN THE CONTRACTOR AND OWNER.
7. THIS PROJECT HAS A TOTAL AREA OF 0.55 ACRES. THE DISTURBED AREA IS THE AREA ASSOCIATED WITH CLEARING, GRADING, EXCAVATING, FILLING OF LAND, OR OTHER SIMILAR ACTIVITIES WHICH MAY RESULT IN SOIL EROSION, AS DEFINED UNDER "CONSTRUCTION ACTIVITIES" IN THE STATE OF GEORGIA NATURAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. GAR100001.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE INGRESS AND EGRESS FROM THE PROJECT SITE FOR ALL VEHICLES INCLUDING, BUT NOT LIMITED TO, TRAFFIC ON ADJACENT PUBLIC ROADS AND PARKING LOTS AFFECTED BY CONSTRUCTION TRAFFIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL TRAFFIC CONTROL DEVICES FOR THE SITE IN ACCORDANCE WITH GA DOT STANDARDS AND SPECIFICATIONS.

CONSTRUCTION METHODS:

- 1. CONTRACTOR SHALL COORDINATE WITH BULLOCH COUNTY STAFF REGARDING WORKING HOURS, WITH THE EXCEPTION OF DEWATERING UNLESS OTHERWISE NOTED OR AS DETERMINED BY THE ENGINEER.
2. CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER OF ALL ACTIVITIES THAT SIGNIFICANTLY AFFECT NOISE LEVELS OR TRAFFIC IN THE AREA.
3. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO OR CONCURRENT WITH LAND DISTURBANCE ACTIVITIES AND SHALL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION OR AS DIRECTED BY THE ENGINEER.
4. GRADE TO ELEVATIONS AND DIMENSIONS SHOWN ON DRAWINGS. GRADED ELEVATION TOLERANCE SHALL BE +/- 0.1 FT.
5. THE CONTRACTOR SHALL DISPOSE OF WASTE SOIL OFF SITE, AT AN APPROVED SITE THAT MEETS ALL STATE AND LOCAL PERMITTING REQUIREMENTS. THE CONTRACTOR SHALL STOCKPILE EXCAVATION MATERIAL ON-SITE IN ACCORDANCE WITH EROSION AND SEDIMENT CONTROL PLAN SPECIFICATIONS.
6. CONTRACTOR SHALL ACCESS THE WORK AREA VIA THE ACCESS ENTRANCE SHOWN ON DRAWINGS.
7. GRADES, ELEVATIONS, AND LOCATIONS SHOWN ON THE PLANS FOR DRAINAGE STRUCTURES MAY BE MINIMALLY ADJUSTED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER TO ACCOMMODATE UNFORESEEN CONDITIONS.
8. THE CONTRACTOR SHALL STRICTLY ADHERE TO DUST CONTROL REGULATIONS. ALL AREAS SUBJECTED TO DUST FORMATION MUST BE PERIODICALLY WATERED SUFFICIENT TO RETARD DUST.
9. COMPLETE AND RETURN THE SOLID WASTE DISPOSAL MANAGEMENT PLAN AFFIDAVIT PRIOR TO ISSUANCE OF PERMIT. IF APPLICABLE, COMPLETE THE NOTIFICATION OF PERMIT BY RULE OPERATIONS FORM, MAIL TO THE DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION AND PROVIDE A COPY OF SAID FORM TO OWNER
10. TYPE OF GRASS OR SOD USED ON THIS PROJECT WILL BE REQUIRED TO MATCH ANY TYPE OF GRASS OR SOD WHICH MAY BE PLANTED AND GROWING ON THE ADJACENT LAWN. I.E. BERMUDA SOD FOR BERMUDA SOD, ZOYSIA FOR ZOYSIA ETC. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY COST INCURRED TO COMPLY WITH THIS REQUIREMENT.
11. CONTRACTOR SHALL REMOVE TEMPORARY FENCING AT THE END OF CONSTRUCTION. RESTORE SITE TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING CONDITIONS.
12. CONTRACTOR SHALL CALL BULLOCH COUNTY PROJECT MANAGER/CONSTRUCTION MANAGER TO SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF ANY CONSTRUCTION
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING STORM DRAINAGE STRUCTURES AND CULVERTS, ASPHALT PAVEMENT IN ACCORDANCE WITH GA DOT STANDARDS AND SPECIFICATIONS.

FEMA GRANT NOTES:

- 1. THE CONTRACTOR WILL DETERMINE THE SOURCE OF BORROW OR FILL MATERIAL PRIOR TO CONDUCTING ANY REPAIRS. THE CONTRACTOR WILL ENSURE THAT ALL THE FOLLOWING FEMA REQUIREMENTS WILL BE MET:
1.1. ALL BORROW OR FILL MATERIAL MUST COME FROM PRE-EXISTING STOCKPILES. MATERIAL RECLAIMED FROM MAINTAINED ROADSIDE DITCHES (PROVIDED THE DESIGNED WIDTH OR DEPTH OF THE DITCH IS NOT INCREASED) OR COMMERCIALY PROCURED MATERIAL FROM A SOURCE EXISTING PRIOR TO THE DISASTER EVENT. IF THE USE OF A NON-COMMERCIAL SOURCE OR A COMMERCIAL SOURCE THAT WAS NOT PERMITTED TO OPERATE PRIOR TO THE DIASER EVENT, E.G. A NEW PIT, AGRICULTURAL FIELDS, ROAD ROWS, ETC., IN WHOLE OR IN PART, REGARDLESS OF COST, THE CONTRACTOR MUST NOTIFY THE CLIENT PRIOR TO EXTRACTING MATERIAL. THE CLIENT AND FEMA MUST REVIEW THE SOURCE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL ENVIRONMENTAL PLANNING AND HISTORIC PRESERVATION LAWS AND EXECUTIVE ORDERS PRIOR TO A THE CONTRACTOR COMMENCING BORROW EXTRACTION. CONSULTATION AND REGULATORY PERMITTING MAY BE REQUIRED.
1.3. DOCUMENTATION OF BORROW SOURCES UTILIZED IS REQUIRED AT CLOSEOUT.
2. FOR DISASTERS DECLARED ON DECEMBER 20, 2019, OR NEWER, FEMA APPLICANTS ARE REQUIRED TO FOLLOW THE PROVISION OF CONSENSUS BASED CODES, SPECIFICATIONS AND STANDARDS FOR PUBLIC ASSISTANCE FEMA RECOVERY INTERIM POLICY FP-104-009-11 VERSION 2.1 FOR PERMANENT WORK. THE POLICY IDENTIFIES THE REQUIRED CONSENSUS-BASED CODES, SPECIFICATIONS AND STANDARDS IN APPENDIX A. THIS PROJECT WILL REQUIRE COMPLIANCE WITH AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), AMERICAN CONCRETE INSTITUTE (ACI), AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE), AND U.S. DEPARTMENT OF TRANSPORTATION (DOT), GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT), AND FEDERAL HIGHWAY ADMINISTRATION (FHWA).
3. THE CONTRACTOR WILL MONITOR GROUND DISTURBANCE AND IF ANY POTENTIAL ARCHAEOLOGICAL RESOURCES ARE DISCOVERED, WILL IMMEDIATELY CEASE CONSTRUCTION IN THAT AREA AND NOTIFY THE STATE AND FEMA.
4. REQUIRES THAT ALL BORROW OR FILL MATERIAL MUST COME FROM PRE-EXISTING STOCKPILES
5. IN ACCORDANCE WITH EO 11988 CONDITION, COORDINATION WITH THE LOCAL FLOODPLAIN ADMINISTRATOR HAS BEEN CONDUCTED. ALL COORDINATION WILL BE DOCUMENTED AND COPEL FORWARDED TO THE STATE AND FEMA FOR INCLUSION IN THE PERMANENT PROJECT FILES.
6. IN ACCORDANCE WITH EO 11990 CONDITION, BEST MANAGEMENT PRACTICES ARE IMPLEMENTED TO PREVENT EROSION AND SEDIMENTATION TO SURROUNDING, NEARBY OR ADJACENT WETLANDS. THIS INCLUDES EQUIPMENT STORAGE AND STAGING OF CONSTRUCTION TO PREVENT EROSION AND SEDIMENTATION TO ENSURE THAT WETLANDS ARE NOT ADVERSELY IMPACTED PER THE CLEAN WATER ACT AND EXECUTIVE ORDER 11990. SEE EROSION CONTROL AND SEDIMENTATION SHEETS (C5-00 - C5-81)

SUMMARY OF QUANTITIES:

Table with 4 columns: ITEM, Est QTY, Description, Units. Lists various construction materials and quantities such as TRAFFIC CONTROL, TEMPORARY GRASSING, CONSTRUCTION DEBRIS, etc.

Drawing name: K:\AMT - WaterResources\017983000_BrannenPondRoad\CAD\Plan_Sheets\CO-01 - GENERAL NOTES.dwg CO-01 GENERAL NOTES - Jul 05, 2024 11:25am by: nataly.iglesias



BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

Table with 4 columns: NO., REVISION DESCRIPTIONS, DATE, BY. Lists revision details for the drawing.

FINAL: FOR CONSTRUCTION
BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT

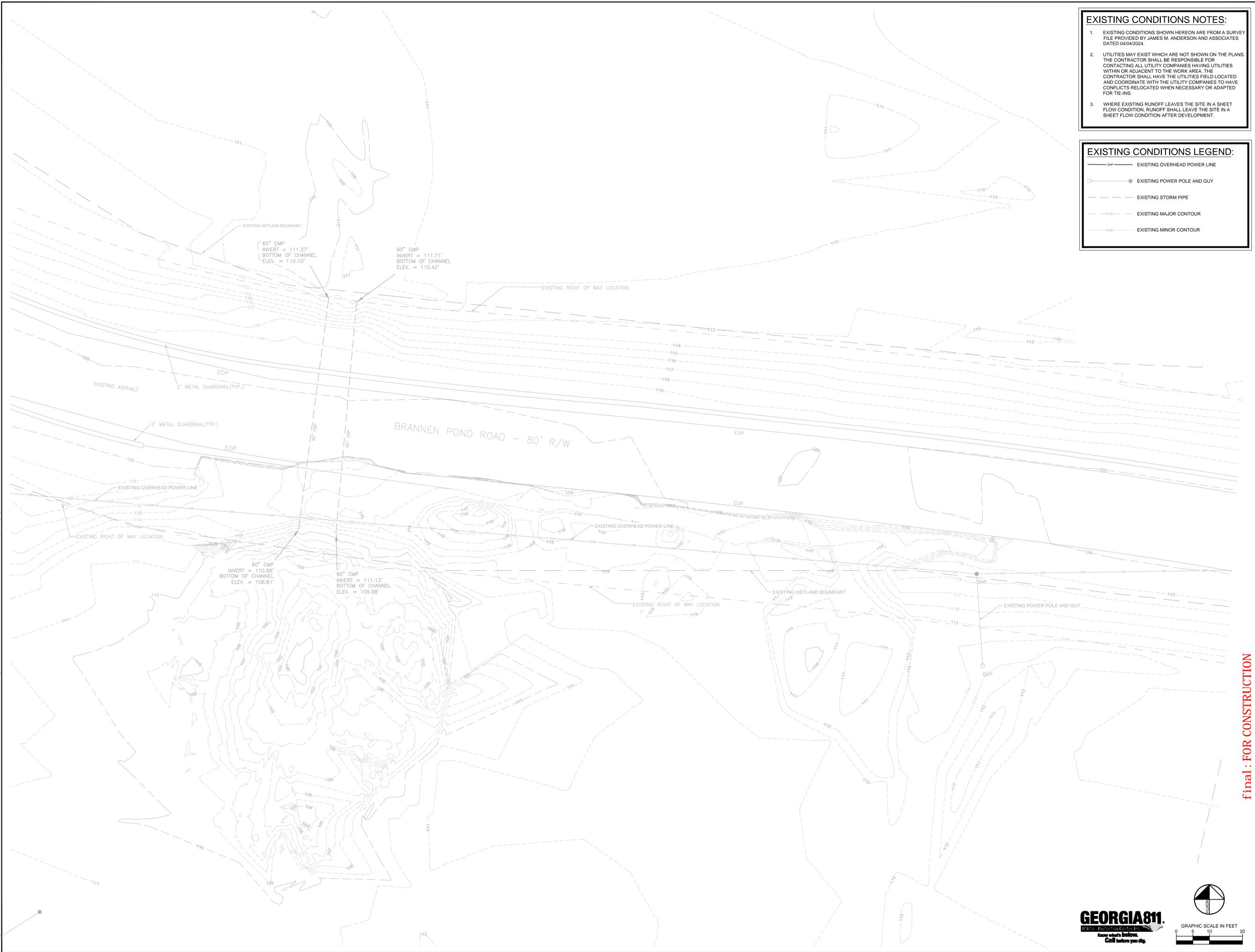


GSWCC CERT. (LEVEL II) 0000068887
DRAWN BY NF
DESIGNED BY PB
REVIEWED BY EB
DATE 07/05/2024
PROJECT NO. 017983000

GENERAL NOTES

SHEET NUMBER
C0-01

Drawing name: K:\MT - WaterResources\017983000 - BrannenPondRoad\CAD\Plan_Sheets\C0-10 - EXISTING CONDITIONS PLAN - Jul 05, 2024 11:15am by: natshy.figueroa



EXISTING CONDITIONS NOTES:

- EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY JAMES M. ANDERSON AND ASSOCIATES DATED 04/04/2024.
- UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
- WHERE EXISTING RUNOFF LEAVES THE SITE IN A SHEET FLOW CONDITION, RUNOFF SHALL LEAVE THE SITE IN A SHEET FLOW CONDITION AFTER DEVELOPMENT.

EXISTING CONDITIONS LEGEND:

- O/P — EXISTING OVERHEAD POWER LINE
- — EXISTING POWER POLE AND GUY
- - - - - EXISTING STORM PIPE
- 110 — EXISTING MAJOR CONTOUR
- 118 — EXISTING MINOR CONTOUR

Kimley»Horn
© 2022 KIMLEY-HORN AND ASSOCIATES, INC.
 1200 PEACHTREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-8200
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.331.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3	REVISION 01	07/05/2024	NF

PROJECT
 BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT

final : FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

GSWCC CERT. (LEVEL II)
 0000068887
 DRAWN BY: NF
 DESIGNED BY: PB
 REVIEWED BY: EB
 DATE: 07/05/2024
 PROJECT NO.: 017983000

GEORGIA811
Utility Professionals
 Know what's below.
 Call before you dig.

GRAPHIC SCALE IN FEET
 0 5 10 20

SHEET NUMBER
C0-10

EXISTING CONDITIONS PLAN

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Drawing name: K:\MT_WaterResources\07983000_BrannenPondRoad\CAD\Plan_Sheets\C1-00 - DEMOLITION PLAN.dwg C1-00 DEMOLITION PLAN Jul 05, 2024 11:15am by: wabj/lfibucosa



- DEMOLITION NOTES:**
- UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
 - RECEIPT OF ALL PERMITS AND APPROVALS IS REQUIRED BEFORE ANY CONSTRUCTION ACTIVITY.
 - CONSTRUCTION FENCING OR SILT FENCE SHALL NOT OBSTRUCT TRAFFIC FLOW ON EXISTING STREETS UNLESS CLOSURE PERMIT IS OBTAINED.
 - CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION AND RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
 - CONTRACTOR TO COORDINATE WITH UTILITY OWNER TO ENSURE PROPER SEPARATION MAINTAINED UNDER POWER LINES DURING CONSTRUCTION FOR EQUIPMENT.
 - NO GRADED SLOPE SHALL EXCEED 2H:1V.
 - THE PROJECT SITE DOES LIE WITHIN A FLOOD HAZARD AREA PER FIRM PANEL 13031C0335D DATED 08/05/2010.
 - THE CONTRACTOR IS RESPONSIBLE FOR SECURING AND ENSURING THAT ALL DEMOLITION DEBRIS IS DISPOSED OF AT A PERMITTED DISPOSAL SITE BEARING EVIDENCE OF CURRENT PERMITS AND ENVIRONMENTAL CLEARANCE. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY FOR ACCEPTANCE THE NAME, ADDRESS, CONTACT INFORMATION, AND ALL PERTINENT PERMITS AND ENVIRONMENTAL CLEARANCE PERTAINING TO THE PROPOSED DISPOSAL SITE PRIOR TO COMMENCEMENT OF DEMOLITION WORK.

- DEMOLITION LEGEND:**
- REMOVE EXISTING STRUCTURE
 - RETAIN EXISTING ASPHALT PAVEMENT
 - REMOVE FULL DEPTH EXISTING ASPHALT PAVEMENT

Kimley Horn
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 1200 PEACHTREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-8700
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3	REVISION 01	07/05/2024	NF

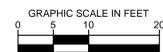
BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT



GSVCC CERT. (LEVEL II) 0000068887
 DRAWN BY NF
 DESIGNED BY PB
 REVIEWED BY EB
 DATE 07/05/2024
 PROJECT NO. 017983000

DEMOLITION PLAN
 SHEET NUMBER
C1-00

final : FOR CONSTRUCTION



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Drawing name: K:\MT - WaterResources\017983000 - BrannenPondRoad\CAD\Plan_Sheets\C2-01 - STAGING PLAN.dwg C2-01 PROPOSED SITE PLAN STAGE 2 Jul 05, 2024 12:06pm by: nash/figueroa



DEVELOPMENT SUMMARY:

SITE SUMMARY:

SITE AREA:	0.55	ACRES
IMPERVIOUS AREA:	0.50	ACRES (90%)
PERVIOUS AREA:	0.05	ACRES (10%)
TOTAL DISTURBED AREA:	0.55	ACRES

SITE NOTES:

- SITE WILL BE CONSTRUCTED IN STAGES TO PROVIDE CLARITY OF TIE IN POINTS TO EXISTING GRADE AND PAVEMENT AND TO PRESERVE THE NORTHERN LANE OF THE ROAD.
 - IN STAGE 1, CONTRACTOR WILL INSTALL NEW BOX CULVERTS AND HEADWALLS. THE CONTRACTOR IS TO TAKE CARE AND NOT EXPOSE THE NORTHERN HALF OF THE ROADWAY TO FURTHER DAMAGE.
 - STAGE 2 INVOLVES EARTHWORK INCLUDING SLOPE REPAIRS, SHOULDER BUILDING, SUBGRADE CONSTRUCTION, GAB WORK, AND 19 MM ASPHALT PAVING IS TO MATCH THE EXISTING PROFILE ELEVATION. IN OTHER WORDS, MATCH THE ELEVATION OF THE EXISTING ASPHALT TO BE RETAINED ON THE NORTHERN HALF OF THE ROADWAY BEING PROTECTED FROM FURTHER DAMAGE DURING STAGE 1.
 - STAGE 3 INVOLVES CONSTRUCTING THE FINAL PAVEMENT SURFACE AT FULL WIDTH FOR THE ENTIRE LENGTH FROM 0+00 TO 3+00.
- EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY JAMES M. ANDERSON AND ASSOCIATES, DATED 04/04/2024.
- ALL DIMENSIONS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- ALL EXISTING SIGNAGE AND STRIPING MUST BE REPLACED IN KIND AND MEET THE LATEST REQUIREMENTS SET FORTH BY MUTCD, GDOT, AND GEORGIA STATE CODE.

SITE PLAN LEGEND:

	TRENCH BACKFILL
	GAB AND 19MM ASPHALT BINDER
	12.5MM FINAL ASPHALT PAVING
	CONCRETE
	GDOT TYPE 3 RIPRAP

final : FOR CONSTRUCTION

Kimley Horn
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1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE (404) 418-8700
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF

PROJECT
BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT

CLIENT

GSWCC CERT. (LEVEL II) 00000068887

DRAWN BY NF

DESIGNED BY PB

REVIEWED BY EB

DATE 07/05/2024

PROJECT NO. 017983000

TITLE

PROPOSED SITE PLAN STAGE 2

SHEET NUMBER

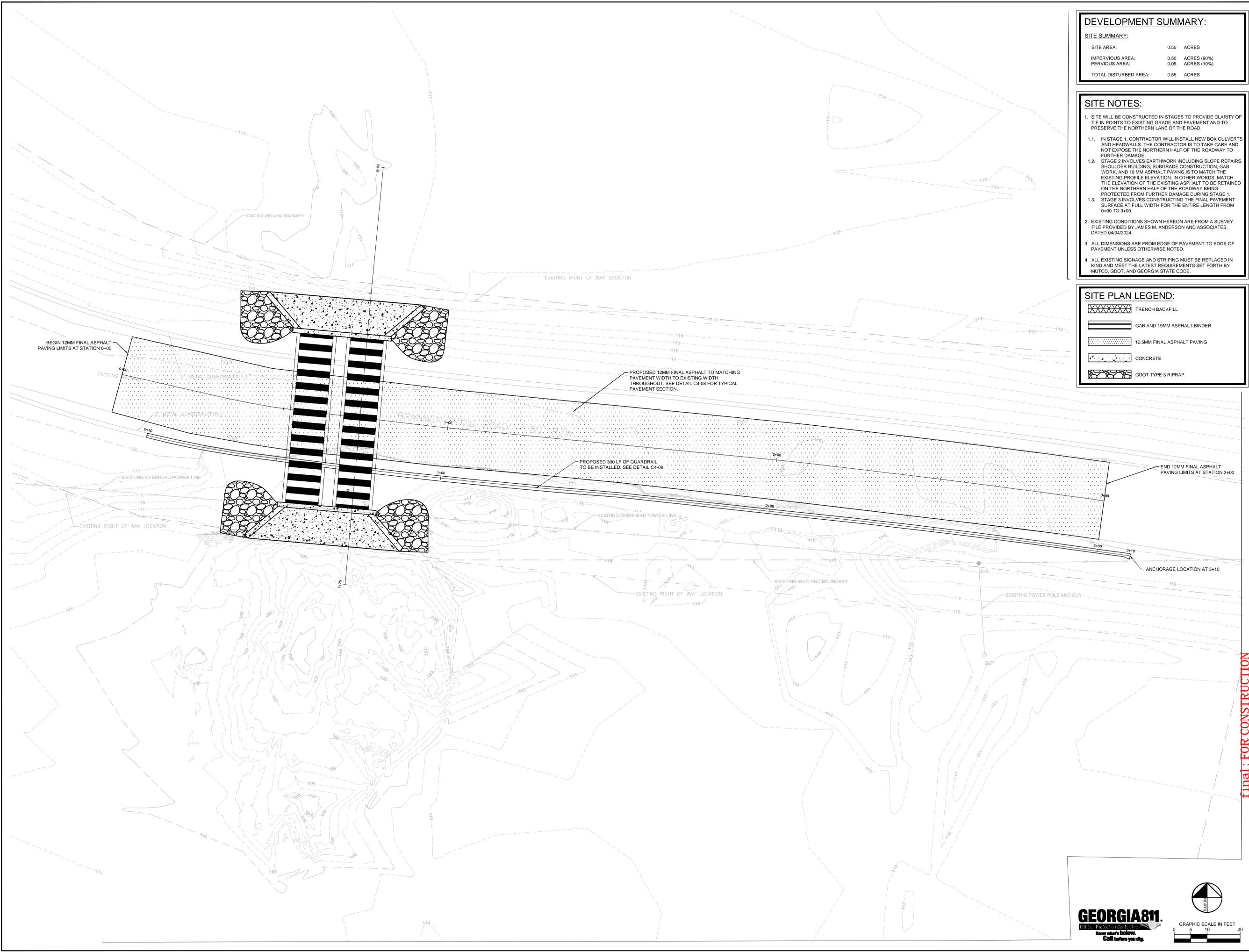
C2-01

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GRAPHIC SCALE IN FEET

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DEVELOPMENT SUMMARY:

SITE SUMMARY:	
SITE AREA:	0.55 ACRES
IMPERVIOUS AREA:	0.50 ACRES (90%)
PERVIOUS AREA:	0.05 ACRES (10%)
TOTAL DISTURBED AREA:	0.55 ACRES

- SITE NOTES:**
- SITE WILL BE CONSTRUCTED IN STAGES TO PROVIDE CLARITY OF TIE IN POINTS TO EXISTING GRADE AND PAVEMENT AND TO PRESERVE THE NORTHERN LANE OF THE ROAD.
 - IN STAGE 1, CONTRACTOR WILL INSTALL NEW BOX CULVERTS AND HEADWALLS. THE CONTRACTOR IS TO TAKE CARE AND NOT EXPOSE THE NORTHERN HALF OF THE ROADWAY TO FURTHER DAMAGE.
 - STAGE 2 INVOLVES EARTHWORK INCLUDING SLOPE REPAIRS, SHOULDER BUILDING, SUBGRADE CONSTRUCTION, GAB WORK, AND 19 MM ASPHALT PAVING IS TO MATCH THE EXISTING PROFILE ELEVATION. IN OTHER WORDS, MATCH THE ELEVATION OF THE EXISTING ASPHALT TO BE RETAINED ON THE NORTHERN HALF OF THE ROADWAY BEING PROTECTED FROM FURTHER DAMAGE DURING STAGE 1.
 - STAGE 3 INVOLVES CONSTRUCTING THE FINAL PAVEMENT SURFACE AT FULL WIDTH FOR THE ENTIRE LENGTH FROM 0+00 TO 3+00.
 - EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY JAMES M. ANDERSON AND ASSOCIATES, DATED 04/04/2024.
 - ALL DIMENSIONS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 - ALL EXISTING SIGNAGE AND STRIPING MUST BE REPLACED IN KIND AND MEET THE LATEST REQUIREMENTS SET FORTH BY MUTCD, GDOT, AND GEORGIA STATE CODE.

SITE PLAN LEGEND:

	TRENCH BACKFILL
	GAB AND 19MM ASPHALT BINDER
	12.5MM FINAL ASPHALT PAVING
	CONCRETE
	GDOT TYPE 3 RIPRAP

Kimley Horn

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1200 PEACH-TREE STREET, NE SUITE 800
ATLANTA, GA 30341
PHONE: (404) 418-8700
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY

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PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF

BRANNEN POND ROAD

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12TH DISTRICT

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PROJECT

CLIENT

GSVCC CERT. (LEVEL II) 0000068887

DRAWN BY NF

DESIGNED BY PB

REVIEWED BY EB

DATE 07/05/2024

PROJECT NO. 017983000

TITLE

SHEET NUMBER

PROPOSED SITE PLAN STAGE 3

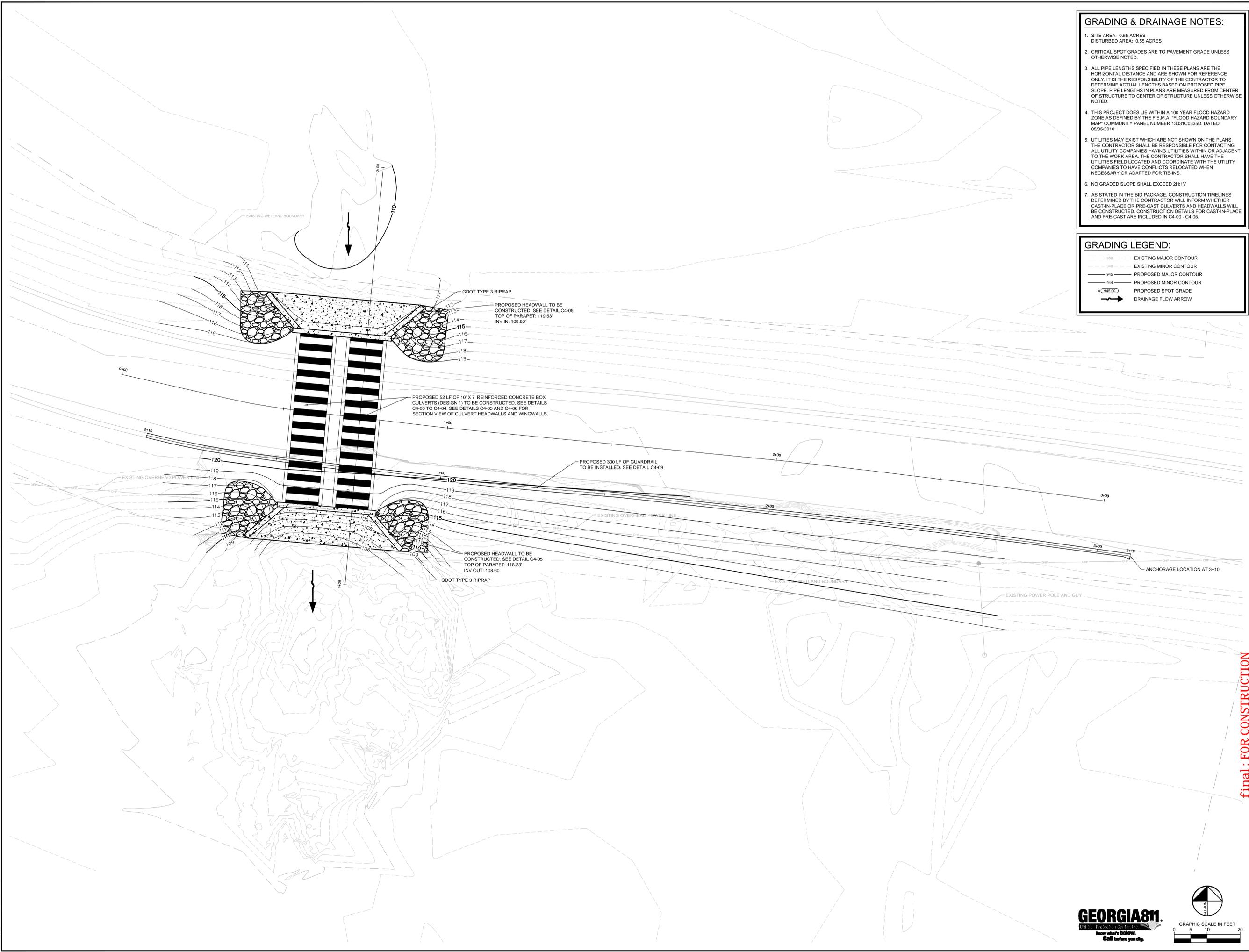
C2-02

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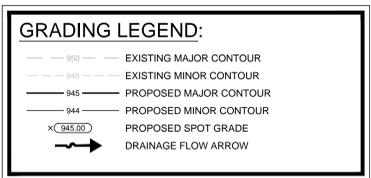
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Drawing name: K:\MT - WaterResources\017983000 - BranненPondRoad\CAD\Plan_Sheets\C3-00 - GRADING & DRAINAGE PLAN - Jul 05, 2024 12:09pm by: ratty/figueroa



- GRADING & DRAINAGE NOTES:**
1. SITE AREA: 0.55 ACRES
DISTURBED AREA: 0.55 ACRES
OTHERWISE NOTED.
 2. CRITICAL SPOT GRADES ARE TO PAVEMENT GRADE UNLESS OTHERWISE NOTED.
 3. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
 4. THIS PROJECT DOES NOT LIE WITHIN A 100 YEAR FLOOD HAZARD ZONE AS DEFINED BY THE F.E.M.A. "FLOOD HAZARD BOUNDARY MAP" COMMUNITY PANEL NUMBER 13031C0335D, DATED 08/05/2010.
 5. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
 6. NO GRADED SLOPE SHALL EXCEED 2H:1V
 7. AS STATED IN THE BID PACKAGE, CONSTRUCTION TIMELINES DETERMINED BY THE CONTRACTOR WILL INFORM WHETHER CAST-IN-PLACE OR PRE-CAST CULVERTS AND HEADWALLS WILL BE CONSTRUCTED. CONSTRUCTION DETAILS FOR CAST-IN-PLACE AND PRE-CAST ARE INCLUDED IN C4-00 - C4-05.



final : FOR CONSTRUCTION

Kimley Horn
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 1200 PEACHTREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-3700
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.251.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/20/2024	NF
3	REVISION 01	07/05/2024	NF

BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT



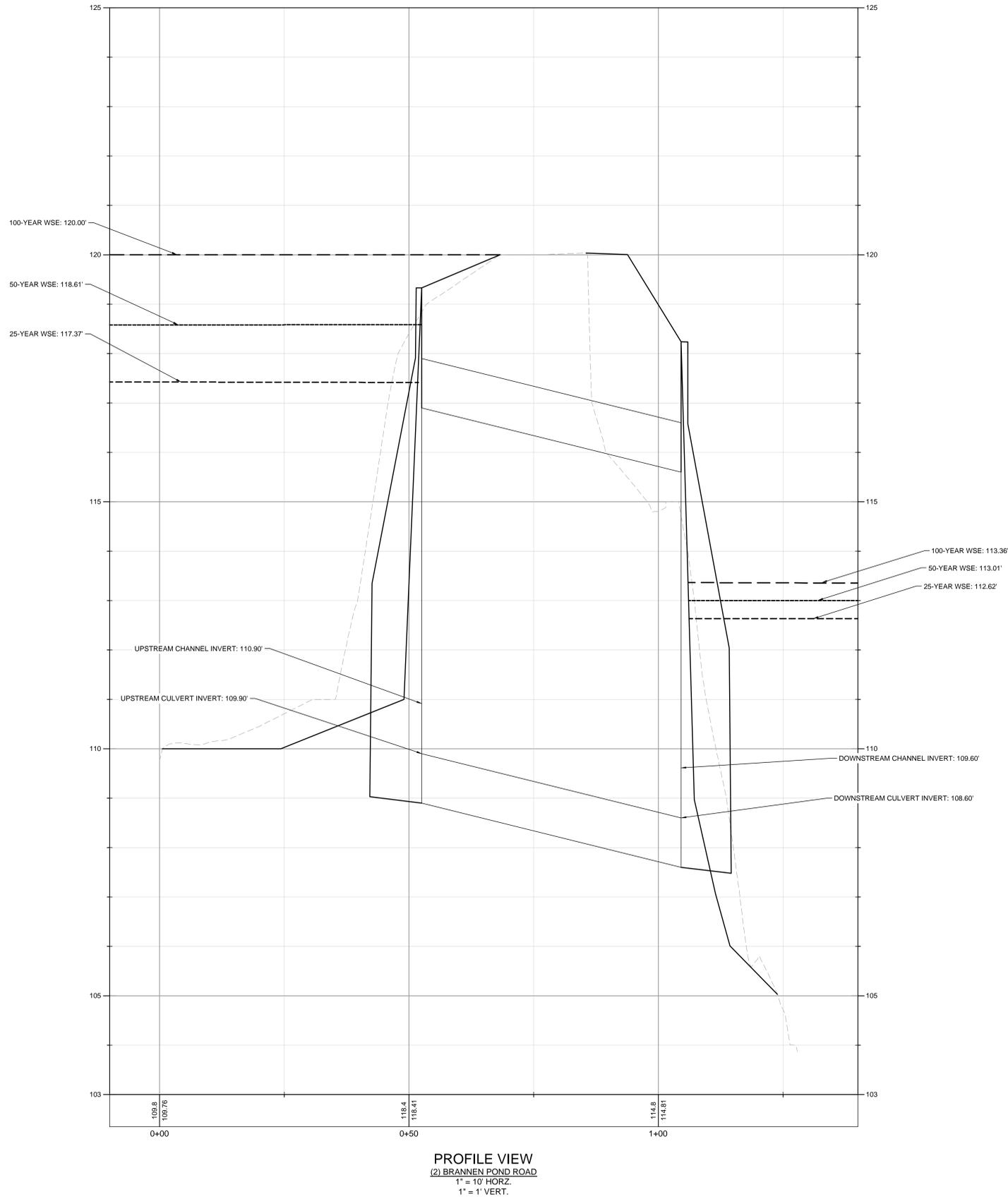
GSWCC CERT. (LEVEL II)	00000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000
TITLE	PROP GRADING & DRAINAGE PLAN
SHEET NUMBER	C3-00

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Drawing name: K:\AMT - WaterResources\017983000 - BrannenPondRoad\CAD\Plan_Sheets\C3-10 - STORM SEWER PROFILES.dwg Jul 05, 2024 11:19am by: rslaby.iguarda



PROFILE VIEW
 (2) BRANNEN POND ROAD
 1" = 10' HORZ.
 1" = 1' VERT.

STORM DRAINAGE PROFILE NOTES:

1. ALL CULVERT LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED CULVERT SLOPE. CULVERT LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. ALL STORM CULVERT SHALL HAVE BEDDING PER BEDDING DETAILS IN CONSTRUCTION DETAIL SHEETS.
3. TOP OF WALL ELEVATIONS GIVEN ARE APPROXIMATE. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR HEADWALL TOP ELEVATIONS.
4. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
5. ALL CULVERT JOINTS TO BE WATER TIGHT.
6. PRIOR TO BEGINNING THE CULVERT WORK, THE CONTRACTOR SHALL SURVEY PROFILE BOTH INLET AND OUTLET ENDS OF PROPOSED DRAINAGE CULVERT FOR AT LEAST 100-FT IN THE EXISTING DITCH LINE OR STREAM BED. CALCULATE THE LENGTH OF EACH CULVERT AND PROVIDE SKETCHES OF THE PROPOSED CULVERTS TO THE COUNTY FOR REVIEW AND APPROVAL AT LEAST 72 HOURS BEFORE BEGINNING THE WORK.

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- - - - - EXISTING GRADE LINE
- - - - - 25-YR HYDRAULIC GRADE LINE
- - - - - 50-YR HYDRAULIC GRADE LINE
- - - - - 100-YR HYDRAULIC GRADE LINE

RCBC CLASSIFICATION CHART:

- 1'-15' CLASS III
 - 15'-20' CLASS IV
 - 20'-30' CLASS V
- ALL CONCRETE CULVERTS SHALL BE A MINIMUM CLASS III WITH 12" MINIMUM COVER.

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NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	05/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3	REVISION 01	07/05/2024	NF

BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT



GSWCC CERT. (LEVEL II) 0000068887
 DRAWN BY NF
 DESIGNED BY PB
 REVIEWED BY EB
 DATE 07/05/2024
 PROJECT NO. 017983000

TITLE
STORM SEWER PROFILES
 SHEET NUMBER
C3-10



BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708

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 1200 PEACH-TREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-8700
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Drawing name: K:\MT -WaterResources\17983000 - BranненPondRoad\CAD\Plan - CONSTRUCTION DETAILS.dwg CA-00 CONSTRUCTION DETAILS Jul 05, 2024 11:20am by: natly.figueroa

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

CULVERT STANDARDS BY SPAN AND HEIGHT						
SPAN (feet)	HEIGHT	SINGLES	DOUBLES	TRIPLES	SIZE (feet)	
		Standard Number & Sheet	Standard Number & Sheet	Standard Number & Sheet	HEIGHT	SPAN
4	3	2401-1, 2-A, 3	2402-1, 2-A, 3	2403-1, 2-A, 3	3	4
	4					
	5					
	6					
5	3	2401-1, 2-B, 3	2402-1, 2-B, 3	2403-1, 2-B, 3	3	5
	4					
	5					
	6					
6	3	2401-1, 2-D, 3	2402-1, 2-D, 3	2403-1, 2-D, 3	3	6
	4					
	5					
	6					
7	4	2401-1, 2-F, 3	2402-1, 2-F, 3	2403-1, 2-F, 3	4	7
	5					
	6					
	7					
8	4	2401-1, 2-H, 3	2402-1, 2-H, 3	2403-1, 2-H, 3	4	8
	5					
	6					
	7					
9	4	2401-1, 2-J, 3	2402-1, 2-J, 3	2403-1, 2-J, 3	4	9
	5					
	6					
	7					
10	4	2401-1, 2-L, 3	2402-1, 2-L, 3	2403-1, 2-L, 3	4	10
	5					
	6					
	7					

WINGWALLS AND PARAPETS STANDARDS BY SKEW	
SKEW	Standard Number & Sheet
90 DEG	2404-1
75 DEG	2405-1, 2
60 DEG	2405-1, 2
45 DEG	2405-1, 3

APRON STANDARDS	
Standard Number & Sheet	
2406-1, 2	

INDEX OF BOX CULVERTS				
STANDARD	INDEX	SHEET	TITLE	
SINGLES	2401	1 OF 3	REINFORCED CONCRETE SINGLE BOX CULVERT	
	2401-2-A	2-A OF 3	4'X3', 4'X4', 4'X5' AND 4'X6'	
	2401-2-B	2-B OF 3	5'X3' AND 5'X4'	
	2401-2-C	2-C OF 3	5'X5', 5'X6', 5'X7' AND 5'X8'	
	2401-2-D	2-D OF 3	6'X3' AND 6'X4'	
	2401-2-E	2-E OF 3	6'X5', 6'X6', 6'X7' AND 6'X8'	
	2401-2-F	2-F OF 3	7'X4'	
	2401-2-G	2-G OF 3	7'X5', 7'X6', 7'X7' AND 7'X8'	
	2401-2-H	2-H OF 3	8'X4', 8'X5' AND 8'X6'	
	2401-2-I	2-I OF 3	8'X7', 8'X8', 8'X9' AND 8'X10'	
	2401-2-J	2-J OF 3	9'X4', 9'X5' AND 9'X6'	
	2401-2-K	2-K OF 3	9'X7', 9'X8', 9'X9' AND 9'X10'	
	2401-2-L	2-L OF 3	10'X4'	
	2401-2-M	2-M OF 3	10'X5', 10'X6', 10'X7' AND 10'X8'	
	2401-2-N	2-N OF 3	10'X9', 10'X10', 10'X11' AND 10'X12'	
	2401-3	3 OF 3	REINFORCED CONCRETE SINGLE BOX CULVERT	
	DOUBLES	2402	1 OF 3	REINFORCED CONCRETE DOUBLE BOX CULVERT
		2402-2-A	2-A OF 3	4'X3', 4'X4', 4'X5' AND 4'X6'
		2402-2-B	2-B OF 3	5'X3' AND 5'X4'
		2402-2-C	2-C OF 3	5'X5', 5'X6', 5'X7' AND 5'X8'
2402-2-D		2-D OF 3	6'X3' AND 6'X4'	
2402-2-E		2-E OF 3	6'X5', 6'X6', 6'X7' AND 6'X8'	
2402-2-F		2-F OF 3	7'X4'	
2402-2-G		2-G OF 3	7'X5', 7'X6', 7'X7' AND 7'X8'	
2402-2-H		2-H OF 3	8'X4', 8'X5' AND 8'X6'	
2402-2-I		2-I OF 3	8'X7', 8'X8', 8'X9' AND 8'X10'	
2402-2-J		2-J OF 3	9'X4', 9'X5' AND 9'X6'	
2402-2-K		2-K OF 3	9'X7', 9'X8', 9'X9' AND 9'X10'	
2402-2-L		2-L OF 3	10'X4'	
2402-2-M		2-M OF 3	10'X5', 10'X6', 10'X7' AND 10'X8'	
2402-2-N		2-N OF 3	10'X9', 10'X10', 10'X11' AND 10'X12'	
2402-3		3 OF 3	REINFORCED CONCRETE DOUBLE BOX CULVERT	
TRIPLES		2403	1 OF 3	REINFORCED CONCRETE TRIPLE BOX CULVERT
		2403-2-A	2-A OF 3	4'X3', 4'X4', 4'X5' AND 4'X6'
		2403-2-B	2-B OF 3	5'X3' AND 5'X4'
		2403-2-C	2-C OF 3	5'X5', 5'X6', 5'X7' AND 5'X8'
	2403-2-D	2-D OF 3	6'X3' AND 6'X4'	
	2403-2-E	2-E OF 3	6'X5', 6'X6', 6'X7' AND 6'X8'	
	2403-2-F	2-F OF 3	7'X4'	
	2403-2-G	2-G OF 3	7'X5', 7'X6', 7'X7' AND 7'X8'	
	2403-2-H	2-H OF 3	8'X4', 8'X5' AND 8'X6'	
	2403-2-I	2-I OF 3	8'X7', 8'X8', 8'X9' AND 8'X10'	
	2403-2-J	2-J OF 3	9'X4', 9'X5' AND 9'X6'	
	2403-2-K	2-K OF 3	9'X7', 9'X8', 9'X9' AND 9'X10'	
	2403-2-L	2-L OF 3	10'X4'	
	2403-2-M	2-M OF 3	10'X5', 10'X6', 10'X7' AND 10'X8'	
	2403-2-N	2-N OF 3	10'X9', 10'X10', 10'X11' AND 10'X12'	
2403-3	3 OF 3	REINFORCED CONCRETE TRIPLE BOX CULVERT		

INDEX OF WINGWALLS, PARAPETS & APRONS			
STANDARD	INDEX	SHEET	TITLE
WINGWALL & PARAPETS	2404	1 OF 1	REINF. CONC. WINGWALLS, TOEWALLS AND PARAPETS FOR CONC. BOX CULVERTS
	2405	1 OF 3	REINF. CONC. SKEWED WINGWALLS, TOEWALLS AND PARAPETS FOR 75 AND 60 DEGREE SKEWS
	2405-2	2 OF 3	REINF. CONC. SKEWED WINGWALLS, TOEWALLS AND PARAPETS FOR 75 AND 60 DEGREE SKEWS
APRONS	2406	1 OF 2	CONCRETE BOX CULVERT APRONS AND BAFFLES DETAIL
	2406-2	2 OF 2	CONCRETE BOX CULVERT APRONS AND BAFFLES DETAIL

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
STANDARD INDEX OF REINFORCED CONCRETE BOX CULVERTS	
NO SCALE SEPTEMBER 2017	
BY	DES. FBF (SUBMITTED) DRW. HAC TRA. (APPROVED) <i>Margaret B. Puseo</i> CHK. FBF
DATE	NUMBER 2400 SHEET 1 OF 1

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1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE (404) 414-3700
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BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF				
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF				
3	REVISION 01	07/05/2024	NF				

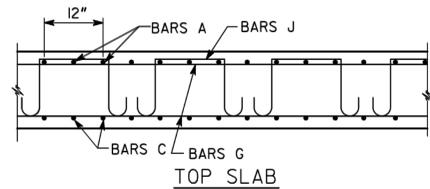
BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT



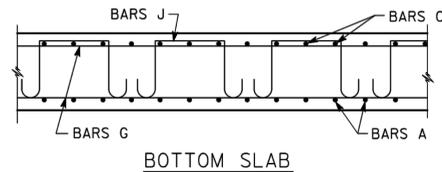
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DRAWN BY NF
DESIGNED BY PB
REVIEWED BY EB
DATE 07/05/2024
PROJECT NO. 017983000

CONSTRUCTION DETAILS
SHEET NUMBER
C4-00

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

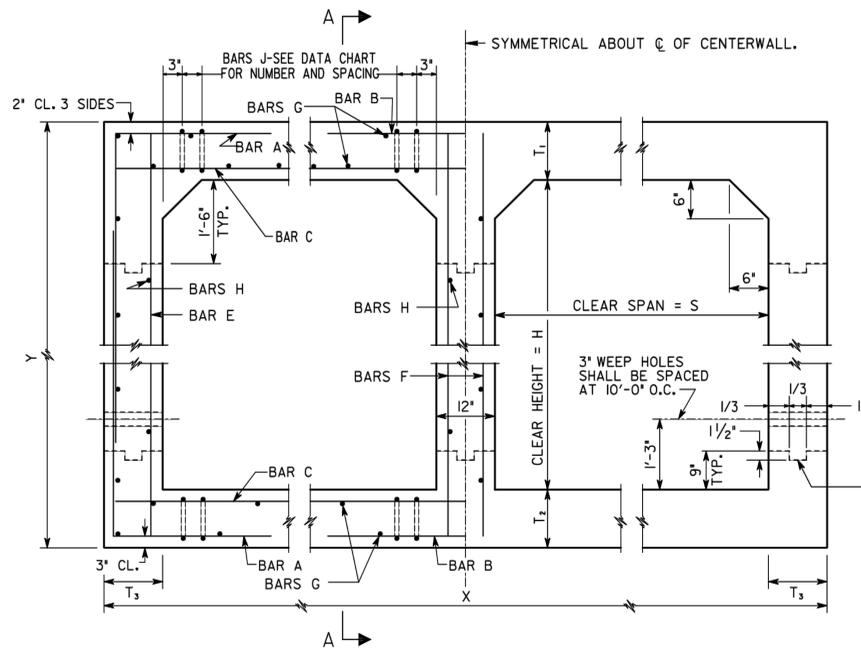


NOTE: SPACING OF BARS A AND C IS 6" OR 12". SEE BARREL REINFORCEMENT QUANTITIES AND DIMENSIONS.



NOTE: LONGITUDINAL WINGWALL AND PARAPET BARS EXTEND INTO BARREL. SEE WINGWALL AND PARAPET STANDARDS.

SECTION A-A



CULVERT SIZES ARE DESIGNATED AS CLEAR SPAN (S) X CLEAR HEIGHT (H).

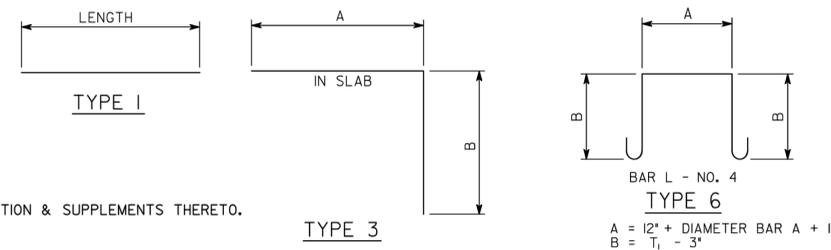
* AT CONTRACTORS OPTION, THE LOWER CONSTRUCTION JOINT IN THE BARREL WALL MAY BE SHIFTED TO 6" ABOVE THE TOP OF THE BOTTOM SLAB.

KEYED CONSTRUCTION JOINT, TYP.

DESIGN	1	2	3	4	5	6	7	8
MAXIMUM FILL HEIGHT	10'	20'	30'	40'	50'	60'	70'	80'

- 1) MINIMUM HEIGHT FROM TOP OF CULVERT TO BOTTOM OF BASE WITHIN TRAVELWAY SHALL BE 1'-0".
- 2) DESIGN OF THE CULVERT SHALL BE DETERMINED BY THE MAXIMUM HEIGHT OF FILL WITH ONLY A SINGLE DESIGN BEING USED FOR THE ENTIRE INSTALLATION.
- 3) TRANSVERSE CONSTRUCTION JOINTS SHALL BE PLACED NORMAL TO THE CENTERLINE OF THE CULVERT AT THE OUTSIDE SHOULDER BREAK POINTS. THE MAXIMUM POUR LENGTH ALONG THE LENGTH OF THE CULVERT SHALL NOT EXCEED 40'-0" FOR DESIGNS 1 TO 3 AND 30'-0" FOR DESIGNS 4 AND ABOVE.
- 4) LONGITUDINAL BARREL REINFORCEMENT STEEL IN THE TRANSVERSE CONSTRUCTION JOINTS SHALL EXTEND THROUGH JOINTS.
- 5) CONSTRUCTION JOINTS SHALL BE WATERPROOFED ON THE EXTERIOR TOP AND SIDES OF BARREL IN ACCORDANCE WITH SECTION 530 OF GEORGIA STANDARD SPECIFICATIONS. WATERPROOFING SHALL BE APPLIED WHEN CONCRETE IS AT LEAST 7 DAYS OLD. ALL COSTS ASSOCIATED WITH WATERPROOFING SHALL BE INCLUDED IN OTHER ITEMS AND WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.
- 6) MINIMUM LENGTH OF LAP SPLICE FOR LONGITUDINAL BARREL REINFORCING STEEL SHALL BE 2'-0".

FOR BAR DIMENSIONS SEE BAR REINFORCEMENT DETAILS. NUMBER OF J BARS SHOWN IN DATA CHART IS THE NUMBER PER CORNER IN ANY ONE TRANSVERSE PLANE. THE TOTAL NUMBER OF J BARS REQUIRED DEPENDS UPON THE LENGTH OF THE SECTION.



GENERAL NOTES

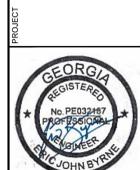
- 1) SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
- 2) ALL CONCRETE SHALL BE CLASS "AA".
- 3) CHAMFER ALL EXPOSED EDGES 3/4".
- 4) COST OF DRAIN PIPES, WEEP HOLES, COARSE AGGREGATE, AND ANY OTHER INCIDENTAL ITEMS SHALL BE INCLUDED IN THE PRICE BID FOR CONTRACT ITEMS.
- 5) CONSTRUCTION JOINTS IN BARREL WALLS ARE REQUIRED.
- 6) FOR DETAILS OF WINGWALLS AND PARAPETS SEE "REINFORCED CONCRETE WINGWALLS, TOEWALLS AND PARAPETS FOR CONCRETE BOX CULVERTS" SHEETS.

DESIGN DATA

SPECIFICATIONS - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014. TYPICAL HL-93 LOADING.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
STANDARD REINFORCED CONCRETE DOUBLE BOX CULVERT	
NO SCALE	SEPTEMBER 2017
DES. YSK (SUBMITTED)	TRA. (APPROVED) Margaret B. Pivelo
DRW. EGS	CHK. JWB
STATE DESIGN POLICY ENGINEER	CHIEF ENGINEER
NUMBER 2402	SHEET 1 OF 3

NO.	REVISION DESCRIPTIONS	DATE	BY
1	80% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/06/2024	NF



GSVCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000

CONSTRUCTION DETAILS

SHEET NUMBER
C4-01

Drawing name: K:\MT -WaterResources\017983000 -BrannenPondRoad\CAD\Plan_Sheets\C4-08 -CONSTRUCTION DETAILS.dwg C4-08 CONSTRUCTION DETAILS Jul 05, 2024 11:20am by: natally.figueroa

DOUBLE 10'-0" X 5'-0" BOX CULVERT								
BARREL REINFORCEMENT QUANTITIES AND DIMENSIONS								
DESIGN	1	2	3	4	5	6	7	8
BAR A	449A @ 6"	450A @ 6"	706A @ 12"	534A @ 6"	540A @ 6"			
BAR B	562 @ 6"	635 @ 6"	730 @ 6"	732 @ 6"	811 @ 6"			
BAR C	743 @ 12"	571 @ 6"	572 @ 6"	645 @ 6"	646 @ 6"			
BAR E	428 @ 12"	431 @ 12"	434 @ 12"	437 @ 12"	440 @ 12"			
BAR F	519 @ 12"	431 @ 12"	434 @ 12"	437 @ 12"	440 @ 12"			
BAR G IN 2 SLABS	64 - 401	68 - 401	68 - 401	80 - 401	80 - 401			
BAR H IN 3 WALLS	20 - 402	20 - 402	20 - 402	24 - 402	24 - 402			
BAR J IN EXT. CORNER	0	0	0	0	0			
BAR J IN INT. CORNER	0	0	3-43B @ 11 1/2"	4-433B @ 13"	4-436B @ 13 1/4"			
T ₁	14"	16"	18"	20"	22"			
T ₂	15"	17"	19"	21"	23"			
T ₃	14"	16"	18"	20"	22"			
X	23'-4"	23'-8"	24'-0"	24'-4"	24'-8"			
Y	7'-5"	7'-9"	8'-1"	8'-5"	8'-9"			
YD ³ CLASS AA CONCRETE/FT	2.724	3.108	3.500	3.900	4.309			
LB BAR REINF STEEL/FT	278.2	305.3	380.6	451.5	491.8			

PARAPET, BARREL END, AND TOEWALL QUANTITIES - 90° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	9.7	10.1	10.4	10.8	11.1			
LB BAR REINF STEEL	1285	1320	1318	1464	1462			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 75° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.1	10.5	10.8	11.2	11.6			
LB BAR REINF STEEL	1616	1656	1658	1810	1812			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 60° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	11.3	11.7	12.1	12.5	12.9			
LB BAR REINF STEEL	1717	1758	1761	1915	1919			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 45° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	13.9	14.3	14.8	15.4	15.9			
LB BAR REINF STEEL	1957	2001	2007	2165	2172			

DOUBLE 10'-0" X 6'-0" BOX CULVERT								
BARREL REINFORCEMENT QUANTITIES AND DIMENSIONS								
DESIGN	1	2	3	4	5	6	7	8
BAR A	460A @ 6"	461A @ 6"	708A @ 12"	546A @ 6"	556A @ 6"			
BAR B	562 @ 6"	635 @ 6"	730 @ 6"	732 @ 6"	810 @ 6"			
BAR C	743 @ 12"	571 @ 6"	572 @ 6"	645 @ 6"	646 @ 6"			
BAR E	437 @ 12"	440 @ 12"	442 @ 12"	444 @ 12"	447 @ 12"			
BAR F	437 @ 12"	440 @ 12"	442 @ 12"	444 @ 12"	447 @ 12"			
BAR G IN 2 SLABS	64 - 401	68 - 401	68 - 401	80 - 401	80 - 401			
BAR H IN 3 WALLS	26 - 402	26 - 402	26 - 402	34 - 402	34 - 402			
BAR J IN EXT. CORNER	0	0	0	0	0			
BAR J IN INT. CORNER	0	0	3-43B @ 11 1/2"	4-433B @ 13"	4-436B @ 12 3/4"			
T ₁	14"	16"	18"	20"	22"			
T ₂	15"	17"	19"	21"	23"			
T ₃	14"	16"	18"	20"	22"			
X	23'-4"	23'-8"	24'-0"	24'-4"	24'-8"			
Y	8'-5"	8'-9"	9'-1"	9'-5"	9'-9"			
YD ³ CLASS AA CONCRETE/FT	2.848	3.244	3.648	4.061	4.481			
LB BAR REINF STEEL/FT	284.9	317.3	395.5	469.2	508.4			

PARAPET, BARREL END, AND TOEWALL QUANTITIES - 90° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.0	10.3	10.7	11.1	11.5			
LB BAR REINF STEEL	1335	1370	1368	1540	1538			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 75° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.4	10.7	11.1	11.5	11.9			
LB BAR REINF STEEL	1668	1707	1710	1888	1891			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 60° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	11.6	12.0	12.4	12.9	13.3			
LB BAR REINF STEEL	1769	1810	1814	1995	1999			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 45° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	14.2	14.7	15.3	15.8	16.4			
LB BAR REINF STEEL	2012	2055	2062	2249	2255			

DOUBLE 10'-0" X 7'-0" BOX CULVERT								
BARREL REINFORCEMENT QUANTITIES AND DIMENSIONS								
DESIGN	1	2	3	4	5	6	7	8
BAR A	543A @ 12"	471A @ 6"	709A @ 12"	561A @ 6"	565A @ 6"			
BAR B	560 @ 6"	634 @ 6"	729 @ 6"	730 @ 6"	809 @ 6"			
BAR C	743 @ 12"	571 @ 6"	572 @ 6"	645 @ 6"	646 @ 6"			
BAR E	444 @ 12"	447 @ 12"	449 @ 12"	451 @ 12"	453 @ 12"			
BAR F	444 @ 12"	447 @ 12"	449 @ 12"	451 @ 12"	453 @ 12"			
BAR G IN 2 SLABS	64 - 401	68 - 401	68 - 401	80 - 401	80 - 401			
BAR H IN 3 WALLS	30 - 402	30 - 402	30 - 402	34 - 402	34 - 402			
BAR J IN EXT. CORNER	0	0	0	0	0			
BAR J IN INT. CORNER	0	3-425B @ 10 1/4"	3-433B @ 11 1/2"	4-433B @ 13"	4-436B @ 12 1/2"			
T ₁	14"	16"	18"	20"	22"			
T ₂	15"	17"	19"	21"	23"			
T ₃	14"	16"	18"	20"	22"			
X	23'-4"	23'-8"	24'-0"	24'-4"	24'-8"			
Y	9'-5"	9'-9"	10'-1"	10'-5"	10'-9"			
YD ³ CLASS AA CONCRETE/FT	2.971	3.380	3.796	4.221	4.654			
LB BAR REINF STEEL/FT	281.3	344.8	408.3	478.9	518.3			

PARAPET, BARREL END, AND TOEWALL QUANTITIES - 90° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.3	10.7	11.1	11.5	11.9			
LB BAR REINF STEEL	1362	1397	1395	1542	1540			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 75° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.7	11.1	11.5	11.9	12.4			
LB BAR REINF STEEL	1696	1736	1738	1890	1893			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 60° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	11.9	12.4	12.8	13.3	13.8			
LB BAR REINF STEEL	1799	1840	1843	1997	2001			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 45° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	14.7	15.2	15.8	16.4	17.0			
LB BAR REINF STEEL	2042	2086	2093	2251	2257			

DOUBLE 10'-0" X 8'-0" BOX CULVERT								
BARREL REINFORCEMENT QUANTITIES AND DIMENSIONS								
DESIGN	1	2	3	4	5	6	7	8
BAR A	559A @ 12"	475A @ 6"	712A @ 12"	567A @ 6"	570A @ 6"			
BAR B	559 @ 6"	633 @ 6"	727 @ 6"	729 @ 6"	808 @ 6"			
BAR C	743 @ 12"	571 @ 6"	572 @ 6"	644 @ 6"	645 @ 6"			
BAR E	451 @ 12"	453 @ 12"	455 @ 12"	457 @ 12"	459 @ 12"			
BAR F	451 @ 12"	453 @ 12"	455 @ 12"	457 @ 12"	459 @ 12"			
BAR G IN 2 SLABS	64 - 401	68 - 401	68 - 401	80 - 401	80 - 401			
BAR H IN 3 WALLS	32 - 402	32 - 402	32 - 402	44 - 402	44 - 402			
BAR J IN EXT. CORNER	0	0	0	0	0			
BAR J IN INT. CORNER	0	3-425B @ 10 1/4"	3-433B @ 11 1/2"	4-433B @ 13"	4-436B @ 12 1/4"			
T ₁	14"	16"	18"	20"	22"			
T ₂	15"	17"	19"	21"	23"			
T ₃	14"	16"	18"	20"	22"			
X	23'-4"	23'-8"	24'-0"	24'-4"	24'-8"			
Y	10'-5"	10'-9"	11'-1"	11'-5"	11'-9"			
YD ³ CLASS AA CONCRETE/FT	3.095	3.515	3.944	4.382	4.827			
LB BAR REINF STEEL/FT	288.8	353.6	461.9	495.9	533.8			

PARAPET, BARREL END, AND TOEWALL QUANTITIES - 90° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	10.7	11.1	11.5	12.0	12.4			
LB BAR REINF STEEL	1390	1425	1423	1622	1620			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 75° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	11.1	11.5	12.0	12.4	12.9			
LB BAR REINF STEEL	1725	1764	1767	1973	1976			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 60° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	12.4	12.9	13.4	13.9	14.4			
LB BAR REINF STEEL	1827	1868	1872	2082	2086			
PARAPET, BARREL END, AND TOEWALL QUANTITIES - 45° SKEW - TOTAL								
YD ³ CLASS AA CONCRETE	15.2	15.8	16.4	17.0	17.7			
LB BAR REINF STEEL	2071	2115	2122	2339	2345			

NOTES:
DESIGN 1 WILL BE USED FOR THE DOUBLE 10' X 7' REINFORCED CONCRETE CULVERTS FOR THIS PROJECT.

DATE		DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION		STANDARD REINFORCED CONCRETE DOUBLE BOX CULVERT 10'X5', 10'X6', 10'X7' AND 10'X8'	
BY		NO SCALE SEPTEMBER 2017	
DES. YSK	(SUBMITTED) <i>E.A.H.</i>	NUMBER	
DRW. FGS	STATE DESIGN POLICY ENGINEER	2402	
TRA. _____	(APPROVED) <i>Margaret B. Pardo</i>	SHEET 2-M OF 3	
CHK. JWB	CHIEF ENGINEER		

Kimley-Horn
© 2022 KIMLEY-HORN AND ASSOCIATES, INC.
1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE (404) 414-8700
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION D1	07/05/2024	NF

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT



GSVCC CERT. (LEVEL II) 0000068887
DRAWN BY NF
DESIGNED BY PB
REVIEWED BY EB
DATE 07/05/2024
PROJECT NO. 017983000
TITLE
CONSTRUCTION DETAILS
SHEET NUMBER
C4-02

MARK	LENGTH	TYPE
401	L* - 4"	I
402	L* + 20"	I
403	3'-7"	I
404	3'-9"	I
405	3'-11"	I
406	4'-0"	I
407	4'-1"	I
408	4'-2"	I
409	4'-3"	I
410	4'-4"	I
411	4'-6"	I
412	4'-8"	I
413	4'-10"	I
414	5'-0"	I
415	5'-2"	I
416	5'-4"	I
417	5'-6"	I
418	5'-8"	I
419	5'-10"	I
420	6'-0"	I
421	6'-2"	I
422	6'-4"	I
423	6'-5"	I
424	6'-6"	I
425	6'-8"	I
426	6'-10"	I
427	6'-11"	I
428	7'-0"	I
429	7'-2"	I
430	7'-3"	I
431	7'-4"	I
432	7'-6"	I
433	7'-7"	I
434	7'-8"	I
435	7'-9"	I
436	7'-10"	I
437	8'-0"	I
438	8'-2"	I
439	8'-3"	I
440	8'-4"	I
441	8'-6"	I
442	8'-8"	I
443	8'-10"	I
444	9'-0"	I
445	9'-2"	I
446	9'-3"	I
447	9'-4"	I
448	9'-6"	I
449	9'-8"	I
450	9'-10"	I
451	10'-0"	I
452	10'-2"	I
453	10'-4"	I
454	10'-6"	I
455	10'-8"	I
456	10'-10"	I
457	11'-0"	I
458	11'-2"	I
459	11'-4"	I
460	11'-6"	I
461	11'-8"	I
462	11'-10"	I
463	12'-0"	I
464	12'-2"	I
465	12'-4"	I
466	12'-6"	I
467	12'-8"	I
468	13'-0"	I
469	13'-4"	I
470	13'-8"	I
471	14'-0"	I
472	14'-2"	I
473	14'-4"	I
474	14'-8"	I
475	15'-0"	I
476	15'-4"	I
477	16'-4"	I
478	18'-8"	I
479	18'-10"	I

MARK	LENGTH	TYPE
480	21'-0"	I
481	21'-2"	I
482	23'-0"	I
501	4'-0"	I
502	4'-2"	I
503	4'-5"	I
504	4'-9"	I
505	4'-10"	I
506	5'-0"	I
507	5'-2"	I
508	5'-4"	I
509	5'-6"	I
510	5'-8"	I
511	5'-9"	I
512	5'-10"	I
513	6'-0"	I
514	6'-2"	I
515	6'-4"	I
516	6'-5"	I
517	6'-7"	I
518	6'-11"	I
519	7'-0"	I
520	7'-1"	I
521	7'-2"	I
522	7'-3"	I
523	7'-4"	I
524	7'-5"	I
525	7'-6"	I
526	7'-7"	I
527	7'-8"	I
528	7'-9"	I
529	7'-10"	I
530	7'-11"	I
531	8'-0"	I
532	8'-2"	I
533	8'-4"	I
534	8'-6"	I
535	8'-8"	I
536	8'-10"	I
537	9'-0"	I
538	9'-2"	I
539	9'-4"	I
540	9'-6"	I
541	9'-10"	I
542	10'-0"	I
543	10'-2"	I
544	10'-4"	I
545	10'-8"	I
546	10'-10"	I
547	11'-0"	I
548	11'-2"	I
549	11'-4"	I
550	11'-6"	I
551	11'-8"	I
552	11'-10"	I
553	12'-0"	I
554	12'-2"	I
555	12'-4"	I
556	12'-6"	I
557	12'-8"	I
558	13'-0"	I
559	13'-6"	I
560	13'-10"	I
561	14'-0"	I
562	14'-2"	I
563	14'-4"	I
564	14'-6"	I
565	14'-8"	I
566	16'-2"	I
567	16'-4"	I
568	16'-6"	I
569	19'-0"	I
570	21'-4"	I
571	23'-4"	I
572	23'-8"	I

* L = LENGTH OF CULVERT

MARK	LENGTH	TYPE
601	4'-9"	I
602	5'-3"	I
603	5'-6"	I
604	5'-7"	I
605	5'-8"	I
606	6'-2"	I
607	6'-4"	I
608	6'-7"	I
609	6'-11"	I
610	7'-3"	I
611	7'-4"	I
612	8'-0"	I
613	8'-4"	I
614	8'-10"	I
615	9'-2"	I
616	9'-4"	I
617	9'-6"	I
618	10'-1"	I
619	10'-2"	I
620	10'-6"	I
621	10'-8"	I
622	10'-10"	I
623	11'-2"	I
624	11'-3"	I
625	11'-6"	I
626	11'-8"	I
627	11'-10"	I
628	12'-2"	I
629	12'-3"	I
630	12'-5"	I
631	12'-8"	I
632	13'-0"	I
633	13'-6"	I
634	13'-8"	I
635	14'-0"	I
636	14'-2"	I
637	14'-8"	I
638	16'-8"	I
639	16'-10"	I
640	19'-2"	I
641	19'-4"	I
642	21'-6"	I
643	21'-8"	I
644	23'-8"	I
645	24'-0"	I
646	24'-4"	I

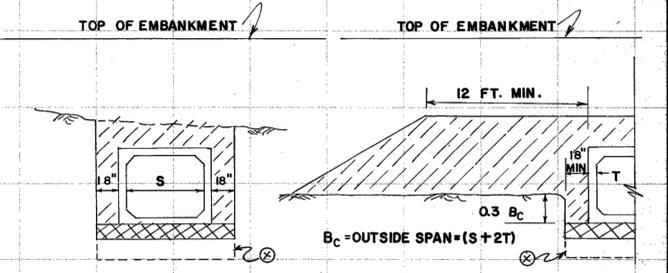
MARK	LENGTH	TYPE
701	7'-8"	I
702	7'-10"	I
703	8'-4"	I
704	8'-6"	I
705	8'-8"	I
706	8'-10"	I
707	9'-0"	I
708	9'-2"	I
709	9'-3"	I
710	9'-4"	I
711	9'-6"	I
712	9'-8"	I
713	9'-10"	I
714	10'-0"	I
715	10'-2"	I
716	10'-4"	I
717	10'-8"	I
718	11'-0"	I
719	11'-4"	I
720	11'-6"	I
721	11'-8"	I
722	11'-10"	I
723	12'-0"	I
724	12'-2"	I
725	12'-3"	I
726	12'-4"	I
727	12'-6"	I
728	12'-8"	I
729	13'-0"	I
730	13'-2"	I
731	13'-4"	I
732	13'-6"	I
733	13'-8"	I
734	14'-0"	I
735	14'-4"	I
736	15'-0"	I
737	15'-4"	I
738	16'-2"	I
739	18'-8"	I
740	18'-10"	I
741	21'-0"	I
742	21'-2"	I
743	23'-0"	I
801	10'-4"	I
802	11'-0"	I
803	11'-3"	I
804	11'-6"	I
805	11'-8"	I
806	11'-10"	I
807	12'-4"	I
808	12'-8"	I
809	13'-0"	I
810	13'-2"	I
811	13'-4"	I

MARK	LENGTH	TYPE	A	B
401A	4'-2"	3	1'-7"	2'-7"
402A	4'-3"	3	1'-8"	2'-7"
403A	4'-4"	3	1'-8"	2'-8"
404A	4'-4"	3	1'-9"	2'-7"
405A	4'-5"	3	1'-9"	2'-8"
406A	4'-6"	3	1'-10"	2'-8"
407A	4'-7"	3	1'-10"	2'-9"
408A	4'-8"	3	2'-1"	2'-7"
409A	4'-9"	3	2'-0"	2'-9"
410A	5'-0"	3	2'-2"	2'-10"
411A	5'-4"	3	1'-9"	3'-7"
412A	5'-5"	3	1'-9"	3'-8"
413A	5'-6"	3	1'-10"	3'-8"
414A	5'-8"	3	1'-11"	3'-9"
415A	5'-8"	3	2'-1"	3'-7"
416A	5'-9"	3	2'-0"	3'-9"
417A	6'-0"	3	2'-2"	3'-10"
418A	6'-0"	3	2'-4"	3'-8"
419A	6'-3"	3	2'-4"	3'-11"
420A	6'-6"	3	1'-11"	4'-7"
421A	6'-6"	3	2'-6"	4'-0"
422A	6'-7"	3	2'-0"	4'-7"
423A	6'-8"	3	2'-0"	4'-8"
424A	6'-9"	3	2'-0"	4'-9"
425A	6'-9"	3	2'-1"	4'-8"
426A	6'-9"	3	2'-8"	4'-11"
427A	6'-10"	3	2'-1"	4'-9"
428A	6'-10"	3	2'-3"	4'-7"
429A	6'-11"	3	2'-2"	4'-9"
430A	6'-11"	3	2'-3"	4'-8"
431A	7'-0"	3	2'-2"	4'-10"
432A	7'-11"	3	2'-3"	4'-10"
433A	7'-11"	3	2'-11"	4'-2"
434A	7'-5"	3	3'-2"	4'-3"
435A	7'-6"	3	3'-5"	4'-11"
436A	7'-7"	3	2'-7"	5'-0"
437A	7'-9"	3	2'-2"	5'-7"
438A	7'-10"	3	2'-2"	5'-8"
439A	7'-10"	3	2'-3"	5'-7"
440A	7'-10"	3	2'-9"	5'-11"
441A	7'-10"	3	3'-3"	4'-7"
442A	8'-0"	3	2'-3"	5'-9"
443A	8'-11"	3	2'-4"	5'-9"
444A	8'-2"	3	3'-0"	5'-2"
445A	8'-3"	3	2'-5"	5'-10"
446A	8'-3"	3	2'-7"	5'-8"
447A	8'-3"	3	2'-8"	5'-7"
448A	8'-4"	3	3'-11"	5'-3"
449A	8'-5"	3	3'-4"	5'-11"
450A	8'-6"	3	3'-3"	5'-3"
451A	8'-8"	3	2'-8"	6'-0"
452A	8'-10"	3	3'-3"	5'-7"
453A	8'-11"	3	2'-10"	6'-11"
454A	9'-1"	3	2'-5"	6'-8"
455A	9'-1"	3	2'-6"	6'-7"
456A	9'-2"	3	2'-5"	6'-9"
457A	9'-3"	3	3'-11"	6'-2"
458A	9'-4"	3	2'-7"	6'-9"
459A	9'-5"	3	3'-2"	6'-3"
460A	9'-5"	3	3'-4"	6'-11"
461A	9'-6"	3	3'-3"	6'-3"
462A	9'-10"	3	2'-10"	7'-0"
463A	9'-11"	3	3'-3"	6'-8"
464A	10'-1"	3	3'-0"	7'-11"
465A	10'-4"	3	3'-2"	7'-2"
466A	10'-5"	3	2'-2"	7'-7"
467A	10'-6"	3	2'-10"	7'-8"
468A	10'-6"	3	2'-11"	7'-7"
469A	10'-7"	3	2'-10"	7'-9"
470A	10'-7"	3	3'-4"	7'-3"
471A	10'-8"	3	3'-5"	7'-3"
472A	10'-9"	3	4'-2"	6'-7"
473A	11'-1"	3	3'-11"	8'-0"
474A	11'-6"	3	3'-4"	8'-2"
475A	11'-9"	3	3'-6"	8'-3"
476A	12'-4"	3	3'-4"	9'-0"
477A	12'-5"	3	4'-9"	7'-8"
478A	12'-9"	3	3'-7"	9'-2"

MARK	LENGTH	TYPE	A	B
479A	13'-0"	3	3'-9"	9'-3"
480A	13'-5"	3	4'-4"	9'-11"
481A	13'-7"	3	3'-7"	10'-0"
482A	13'-8"	3	3'-9"	9'-11"
483A	14'-0"	3	3'-10"	10'-2"
484A	14'-2"	3	3'-11"	10'-3"
485A	16'-8"	3	4'-7"	12'-11"
486A	18'-11"	3	7'-0"	11'-11"
501A	4'-4"	3	1'-9"	2'-7"
502A	4'-8"	3	2'-11"	2'-7"
503A	5'-3"	3	2'-4"	2'-11"
504A	5'-6"	3	1'-11"	3'-7"
505A	5'-8"	3	2'-11"	3'-7"
506A	6'-3"	3	2'-4"	3'-11"
507A	6'-6"	3	2'-6"	4'-0"
508A	6'-8"	3	2'-11"	4'-7"
509A	6'-10"	3	2'-11"	3'-11"
510A	7'-0"	3	2'-5"	4'-7"
511A	7'-0"	3	2'-10"	4'-2"
512A	7'-3"	3	2'-4"	4'-11"
513A	7'-4"	3	3'-3"	4'-11"
514A	7'-5"	3	3'-2"	4'-3"
515A	7'-6"	3	2'-6"	5'-0"
516A	7'-7"	3	3'-3"	4'-4"
517A	7'-9"	3	2'-10"	4'-11"
518A	7'-11"	3	2'-4"	5'-7"
519A	8'-0"	3	2'-4"	5'-8"
520A	8'-0"	3	3'-7"	4'-5"
521A	8'-11"	3	2'-5"	5'-8"
522A	8'-3"	3	2'-6"	

CULVERT SIZE	DESIGN I-A 2 FT. MINIMUM COVER					DESIGN I-B 3 FT. MINIMUM COVER					CULVERT SIZE
	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	MINIMUM AREAS OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.)			MINIMUM AREA OF CIRCUMFERENTIAL REINFORCING STEEL (SQ. IN. PER LIN. FT.)			CLEAR HEIGHT (FT.)	CLEAR SPAN (FT.)	
S	H	As1	As2	As4	As1	As2	As4	T	H	S	
3	6	0.21	0.27	0.12	0.13	0.18	0.12	10	6	3	
4	6	0.18	0.30	0.12	0.12	0.19	0.12	10	6	4	
5	6	0.24	0.33	0.14	0.15	0.23	0.14	10	6	5	
6	7	0.27	0.37	0.17	0.20	0.27	0.17	10	7	6	
3	6	0.26	0.29	0.14	0.17	0.21	0.14	10	6	3	
4	6	0.24	0.33	0.14	0.16	0.23	0.14	10	6	4	
5	6	0.20	0.35	0.14	0.14	0.25	0.14	10	6	5	
6	7	0.25	0.39	0.17	0.18	0.29	0.17	10	7	6	
3	7	0.32	0.33	0.17	0.23	0.23	0.17	10	7	3	
4	7	0.27	0.37	0.17	0.20	0.27	0.17	10	7	4	
5	7	0.25	0.39	0.17	0.18	0.29	0.17	10	7	5	
6	7	0.23	0.41	0.17	0.17	0.30	0.17	10	7	6	
4	8	0.35	0.41	0.19	0.25	0.27	0.19	10	8	4	
5	8	0.31	0.44	0.19	0.23	0.29	0.19	10	8	5	
6	8	0.28	0.48	0.19	0.21	0.34	0.19	10	8	6	
7	8	0.26	0.44	0.19	0.19	0.36	0.19	10	8	7	
4	8	0.43	0.40	0.19	0.33	0.30	0.19	8	8	4	
5	8	0.38	0.43	0.19	0.30	0.33	0.19	8	8	5	
6	8	0.35	0.47	0.19	0.27	0.35	0.19	8	8	6	
7	8	0.33	0.50	0.19	0.25	0.38	0.19	8	8	7	
8	8	0.31	0.53	0.19	0.24	0.43	0.19	8	8	8	
4	9	0.47	0.45	0.22	0.38	0.38	0.22	8	9	4	
5	9	0.43	0.45	0.22	0.35	0.39	0.22	8	9	5	
6	9	0.40	0.48	0.22	0.32	0.42	0.22	8	9	6	
7	9	0.37	0.52	0.22	0.30	0.45	0.22	8	9	7	
8	9	0.35	0.54	0.22	0.28	0.47	0.22	8	9	8	
9	9	0.33	0.57	0.22	0.27	0.49	0.22	8	9	9	
10	10	0.35	0.61	0.24	0.30	0.53	0.24	8	10	10	
4	10	0.50	0.46	0.24	0.44	0.42	0.24	8	10	4	
5	10	0.47	0.46	0.24	0.41	0.42	0.24	8	10	5	
6	10	0.44	0.50	0.24	0.38	0.45	0.24	8	10	6	
7	10	0.41	0.53	0.24	0.35	0.48	0.24	8	10	7	
8	10	0.38	0.56	0.24	0.33	0.51	0.24	8	10	8	
9	10	0.36	0.60	0.24	0.32	0.53	0.24	8	10	9	
10	10	0.35	0.61	0.24	0.30	0.55	0.24	8	10	10	

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



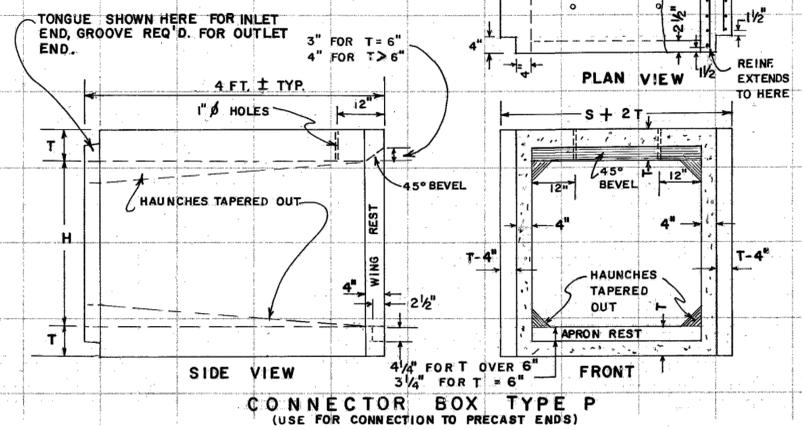
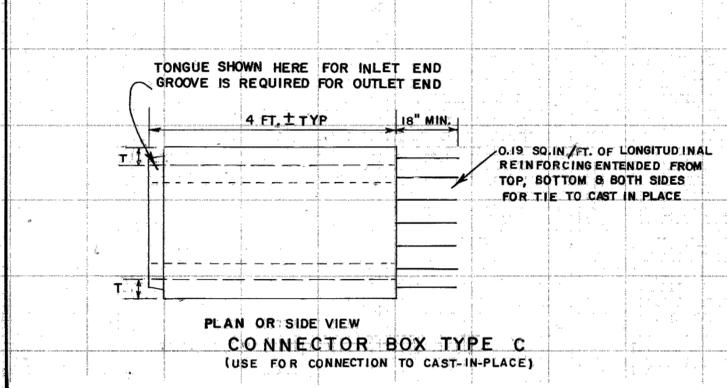
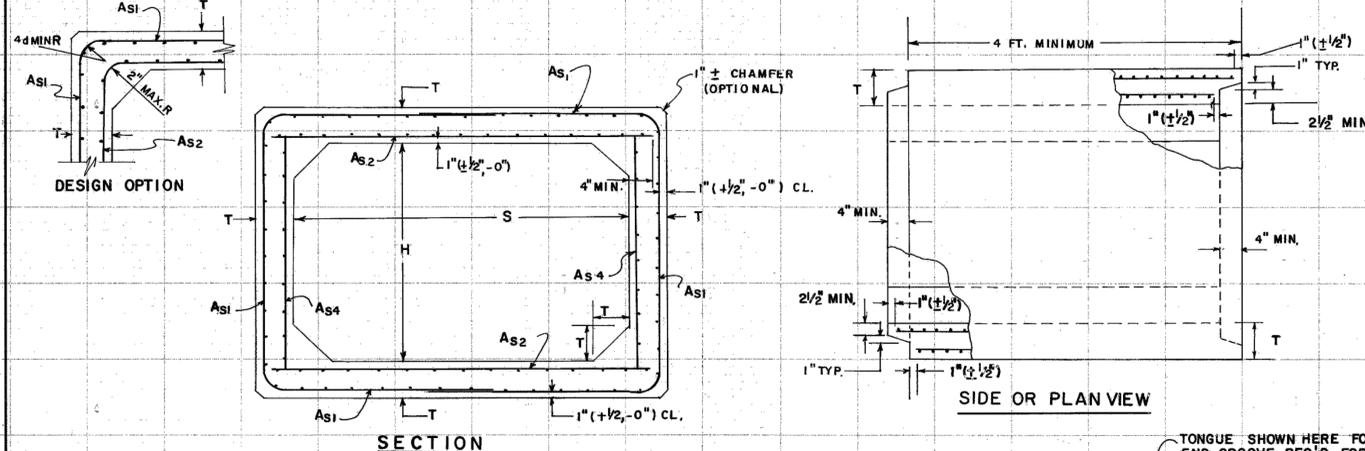
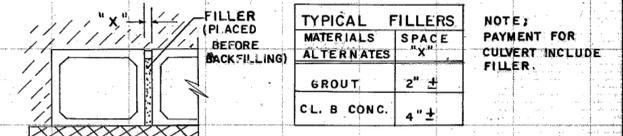
TRENCH INSTALLATION **EMBANKMENT INSTALLATION**

MINIMUM TRENCH DEPTH = $0.3 B_c + \text{BEDDING DEPTH}$

— 6" MIN. DEPTH OF FOUNDATION BACKFILL MATERIAL TYPE II FOR WET AREAS OR 3" MIN. DEPTH FOUNDATION BACKFILL MATERIAL TYPE I OTHERWISE. TYPE I AND II MATERIAL BOTH MAY BE USED IF SPECIFIED. CLASS I SOIL SHALL BE REQUIRED FOR TYPE I BACKFILL MATERIAL.

— NORMAL BACKFILL COMPACTED IN 6" LAYERS BROUGHT UP EVENLY ON BOTH SIDES OF CULVERT FROM TOP OF BEDDING TO MINIMUM REQUIRED COVER.

⊗ FOR AN INCOMPRESSIBLE FOUNDATION, INCREASE TRENCH UNDER BOX TO 12" MINIMUM, WHERE AN UNSTABLE MATERIAL IS ENCOUNTERED, ADDITIONAL EXCAVATION AND BACKFILLING TO DEPTHS AND WIDTHS SPECIFIED BY THE ENGINEER IS REQUIRED.



- GENERAL NOTES:**
- SPECIFICATIONS: GA. STANDARD, CURRENT EDITION, AND SUPPLEMENTS THERETO, CONCRETE SHALL CONFORM TO SECTION 843, 5000 PSI, MINIMUM.
 - REINFORCING REQUIREMENTS NOT SHOWN SHALL BE ACCORDING TO A.A.S.H.T.O. M-259. MINIMUM CLEARANCE FOR CIRCUMFERENTIAL REINFORCEMENT SHALL BE 1" WITH LESS THAN 1" OF CLEARANCE BEING CAUSE FOR REJECTION.
 - ALL JOINTS BETWEEN PRECAST SECTIONS SHALL BE TONGUE & GROOVE WITH JOINT MATERIAL. JOINTS BETWEEN CAST-IN-PLACE AND PRECAST SECTIONS SHALL HAVE LONGITUDINAL STEEL EXTENDING FROM TOP, BOTTOM AND BOTH SIDES SLABS OF THE PRECAST BOX TIED TO THE CAST-IN-PLACE REINFORCEMENT.
 - CULVERTS LARGER THAN THE SPECIFIED SIZE MAY BE SUBSTITUTED WITH PAYMENT BEING BASED UPON THE SPECIFIED SIZE RATHER THAN THE SUBSTITUTION, SUCH A SUBSTITUTION MUST BE APPROVED BY THE ENGINEER. MINIMUM COVER MUST BE RETAINED AND NO ADVERSE EFFECTS PRODUCED.
 - ALTERNATES: CAST-IN-PLACE BOX CULVERTS OR OTHER APPROVED PRECAST DESIGNS.
 - LOADING: HS-20 AND ANY FILL HEIGHTS BETWEEN THE MINIMUM AND MAXIMUM SHOWN.
 - ONLY ONE DESIGN OF PRECAST BOX CULVERT IS TO BE USED FOR ANY INSTALLATION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
PRECAST BOX CULVERT BARRELS
4' x 3' THRU 10' x 10'
SINGLE & MULTIPLE LINES

NO SCALE MARCH, 1985

DES. R.M.U. (SUBMITTED) *Ray G. ...*
DRW. R.M.U. STATE ROAD & AIRPORT DESIGN ENGR
TR.A. G.M.E. (APPROVED) *Bill Rims ...*
CHK. R.K.C. STATE HIGHWAY ENGINEER

NUMBER
2530 P

Kimley Horn
© 2022 KIMLEY HORN AND ASSOCIATES, INC.
1200 PEACHTREE STREET, SUITE 800
ATLANTA, GA 30309
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5788

PROJECT: BRANNEN POND ROAD
SHEET: C4-04
DATE: 07/05/2024

CLIENT: BULLOCH COUNTY
NO. REVISION DESCRIPTIONS
1. 06/17/2024 NF
2. 06/05/2024 NF
3. 07/05/2024 NF

final: FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

GSWCC CERT. (LEVEL II) 0000068887
DRAWN BY: NF
DESIGNED BY: PB
REVIEWED BY: EB
DATE: 07/05/2024
PROJECT NO.: 017983000
TITLE: CONSTRUCTION DETAILS
SHEET NUMBER: C4-04

Drawing name: K:\AMT_WaterResources\017983000 - CONSTRUCTION DETAILS - CONSTRUCTION DETAILS Jul 05, 2024 11:28am by: rmas/fjg

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

WINGWALLS, TOEWALLS AND PARAPETS

CLEAR HEIGHT	N BARS AT 1'-0" C. TO C.						P BARS AT 1'-0" C. TO C.						R BARS AT 1'-0" C. TO C.						M BARS			CLEAR HEIGHT
	SIZE	NO. (CONSTANT LENGTH)	LENGTH *	NO. (VARIABLE LENGTH)	LENGTH *		SIZE	NO. (CONSTANT LENGTH)	LENGTH	NO. (VARIABLE LENGTH)	LENGTH		SIZE	NO. (VARIABLE LENGTH)	LENGTH **		SIZE	NO. (CONSTANT LENGTH)	LENGTH			
					SHORTEST	LONGEST					SHORTEST	LONGEST			SHORTEST	LONGEST						
2'	#4	4	5'-4"	12	4'-4"	5'-2"	#4	20	3'-5"	4	1'-2"	1'-2"	#6	32	3'-6"	3'-6"	#6	14	X+2"	2'		
3'	#4	4	6'-7"	24	4'-4"	6'-5"	#4	20	6'-4"	8	1'-9"	4'-2"	#6	56	3'-6"	3'-6"	#6	14	X+2"	3'		
4'	#5	4	8'-2"	40	4'-5"	8'-2"	#4	20	9'-10"	12	2'-11"	7'-9"	#6	88	3'-6"	3'-6"	#6	14	X+2"	4'		
5'	#5	4	9'-1"	44	4'-11"	9'-0"	#4	20	11'-3"	16	2'-11"	10'-4"	#6	96	3'-6"	3'-6"	#6	14	X+2"	5'		
6'	#5	4	10'-2"	48	5'-5"	9'-11"	#4	24	12'-7"	16	2'-11"	10'-5"	#6	104	3'-6"	3'-6"	#6	14	X+2"	6'		
7'	#5	4	11'-2"	56	5'-11"	11'-2"	#4	24	13'-11"	20	3'-0"	13'-0"	#6	120	3'-6"	3'-6"	#6	14	X+2"	7'		
8'	#6	4	12'-4"	60	6'-6"	12'-3"	#4	28	15'-2"	24	3'-2"	13'-0"	#6	128	3'-8"	4'-0"	#6	14	X+2"	8'		
9'	#6	4	13'-5"	64	7'-0"	13'-2"	#4	28	16'-6"	24	3'-4"	15'-7"	#6	136	3'-8"	4'-6"	#6	14	X+2"	9'		
10'	#7	4	14'-7"	72	7'-8"	14'-7"	#4	32	17'-9"	24	3'-4"	15'-7"	#6	152	3'-8"	5'-0"	#6	14	X+2"	10'		
11'	#7	4	15'-7"	76	8'-2"	15'-6"	#4	32	19'-1"	28	3'-4"	18'-2"	#6	160	3'-8"	5'-6"	#6	14	X+2"	11'		
12'	#8	4	16'-8"	80	8'-9"	16'-6"	#4	36	20'-5"	28	3'-5"	18'-3"	#6	168	3'-8"	6'-0"	#6	14	X+2"	12'		

* LENGTH INCLUDES VERTICAL LEG, HORIZONTAL LEG AND 180° STANDARD HOOK.
 ** LENGTH INCLUDES 2 STANDARD 180° HOOKS.

X = TOTAL BARREL WIDTH OUT TO OUT (DIMENSION "X" FROM CULVERT SHEET)
 Y = TOTAL BARREL HEIGHT OUT TO OUT (DIMENSION "Y" FROM CULVERT SHEET)

GENERAL NOTES

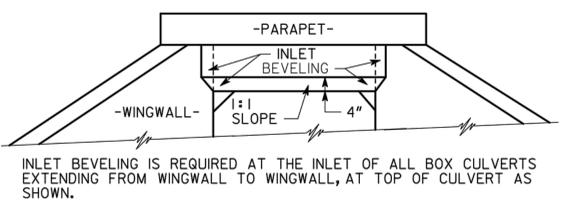
- SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
- MAINTAIN 3" CLEARANCE ON REINFORCEMENT AT FACE OF CONCRETE CAST AGAINST EARTH. MAINTAIN 2" CLEARANCE ON ALL OTHER REINFORCEMENT.
- CHAMFER ALL EXPOSED EDGES 3/4".
- CONCRETE APRONS (SEPARATE STANDARD SHEETS) ARE REQUIRED AT ALL OUTLETS. THE ENGINEER MAY ALLOW AN EXCEPTION FOR BED ROCK CONDITIONS. TOEWALLS UNDER PARAPETS MAY BE MODIFIED AT OUTLETS AS SHOWN ON STANDARDS FOR CONCRETE APRONS.
- PARAPETS AT INLETS SHALL BE CONSTRUCTED WITH A 4"/45° BEVEL.
- CULVERT TO HAVE MINIMUM OF 1'-0" BELOW BOTTOM OF BASE OR CONCRETE PAVEMENT.

DESIGN DATA

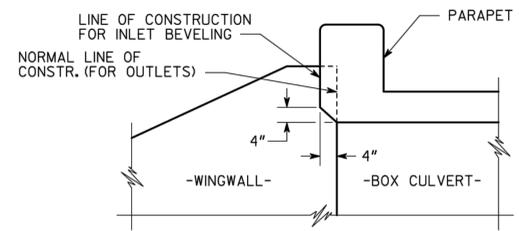
SPECIFICATIONS - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014
 LOADING - HL-93

DIMENSIONS AND QUANTITIES											
CLEAR HEIGHT	H	W ₁	W ₂	S	M	T ₁	Z	CY CLASS AA CONCRETE	LBS. BAR REINF. STEEL	CLEAR HEIGHT	
2'	3'-1"	1'-1"	2'-0"	1'-1"	2'-8"	10"	-	3.3	270	2'	
3'	4'-3 1/2"	2'-3 1/2"	2'-0"	2'-1 1/2"	5'-7"	10"	-	6.0	499	3'	
4'	5'-9"	3'-9"	2'-0"	2'-7"	9'-2"	10"	-	9.2	795	4'	
5'	6'-9"	4'-3"	2'-6"	2'-7"	10'-6"	10"	-	12.4	1083	5'	
6'	7'-9"	4'-9"	3'-0"	2'-7"	11'-10"	10"	-	15.0	1246	6'	
7'	8'-9 1/2"	5'-3 1/2"	3'-6"	2'-7 1/2"	13'-2"	10"	-	17.9	1507	7'	
8'	9'-10 1/2"	5'-10 1/2"	4'-0"	2'-8 1/2"	14'-5"	12"	1'-0"	25.3	2070	8'	
9'	10'-11"	6'-5"	4'-6"	2'-9"	15'-9"	12"	1'-6"	29.9	2345	9'	
10'	11'-11"	6'-11"	5'-0"	2'-9"	17'-0"	12"	2'-0"	34.7	3277	10'	
11'	12'-11"	7'-5"	5'-6"	2'-9"	18'-4"	12"	2'-6"	40.0	3676	11'	
12'	13'-11 1/2"	7'-11 1/2"	6'-0"	2'-9 1/2"	19'-8"	12"	3'-0"	45.8	4788	12'	

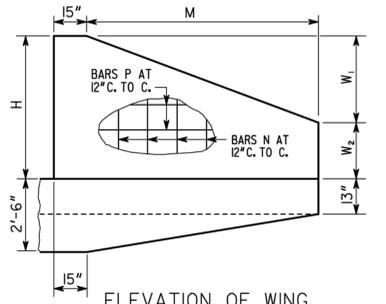
QUANTITIES GIVEN INCLUDE WINGWALL, WINGWALL FOOTING, AND WINGWALL TOEWALL FOR BOTH ENDS.
 SYMMETRICAL ABOUT CULVERT



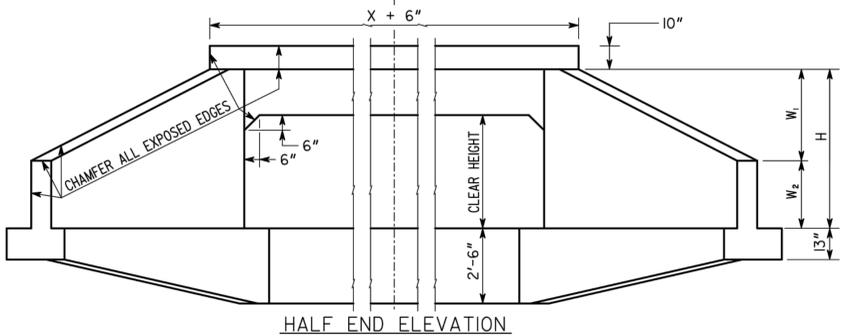
INLET BEVELING IS REQUIRED AT THE INLET OF ALL BOX CULVERTS EXTENDING FROM WINGWALL TO WINGWALL, AT TOP OF CULVERT AS SHOWN.



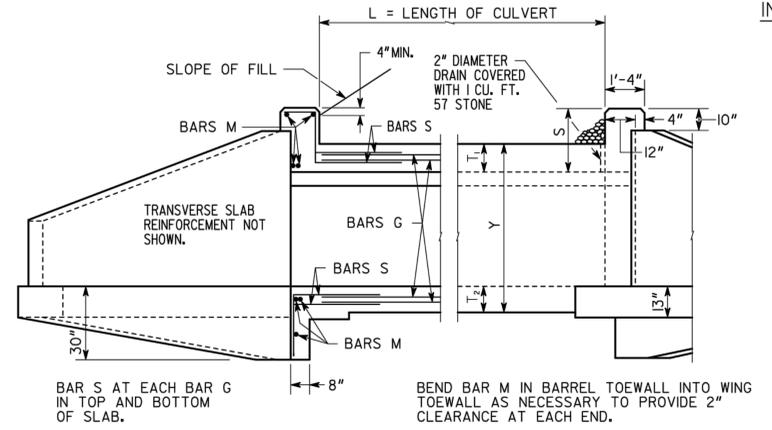
INLET BEVELING DETAIL



ELEVATION OF WING

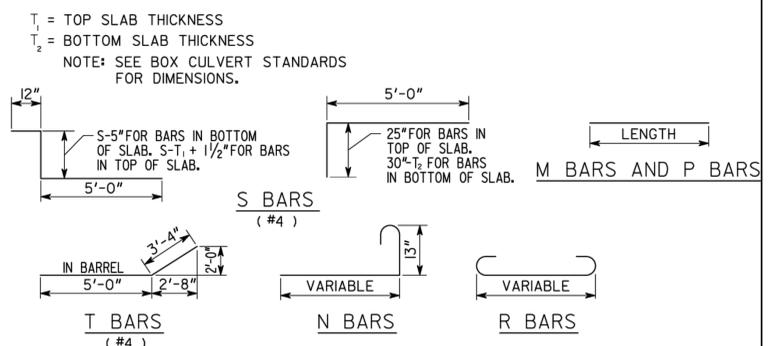


HALF END ELEVATION



PART SECTION

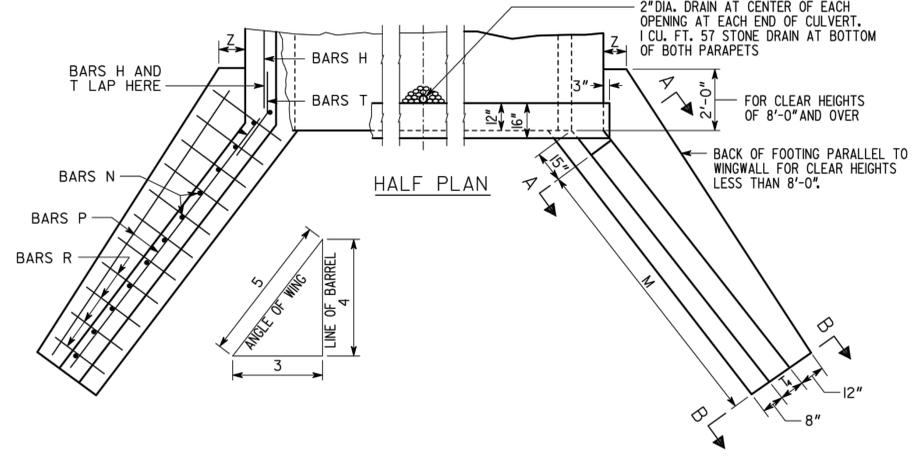
PART ELEVATION



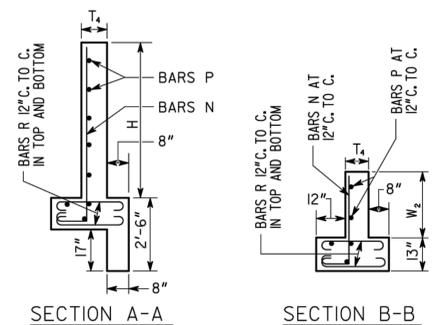
T BARS (#4)

N BARS

R BARS



HALF PLAN



SECTION A-A

SECTION B-B

BARS S AND T ARE LAPPED WITH BARS G AND H, RESPECTIVELY.

DEPARTMENT OF TRANSPORTATION
 STATE OF GEORGIA

STANDARD
 REINFORCED CONCRETE WINGWALLS,
 TOEWALLS AND PARAPETS
 FOR CONCRETE BOX CULVERTS

NO SCALE SEPTEMBER 2017

DES. WEL (SUBMITTED) *B. A. St...*
 DRW. WEL STATE DESIGN POLICY ENGINEER
 TRA. (APPROVED) *Margaret B. Puleo*
 CHK. YSK. CHIEF ENGINEER

NUMBER
 2404
 SHEET 1 OF 1

final : FOR CONSTRUCTION



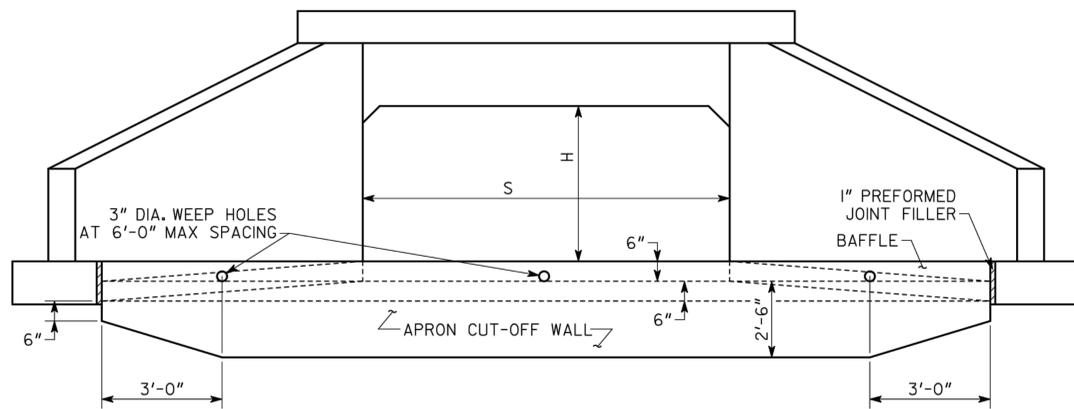
GSVCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000

CONSTRUCTION DETAILS

SHEET NUMBER
C4-05

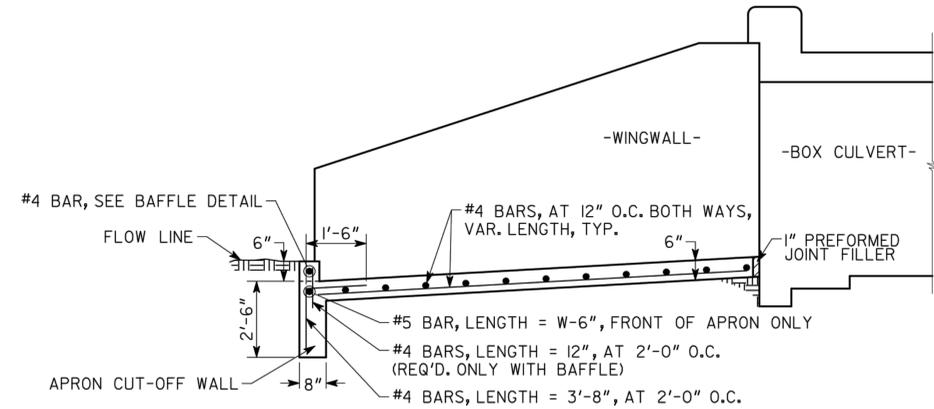
NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
2	100% CONSTRUCTION DOCUMENTS	07/05/2024	NF
3	REVISION 01		

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



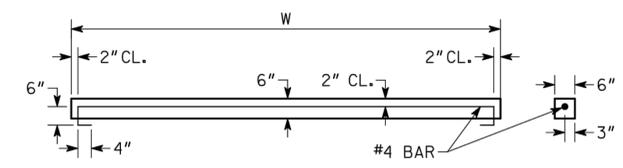
FRONT VIEW OF APRON

S = CLEAR SPAN OF BOX CULVERT
H = CLEAR HEIGHT (RISE) OF BOX CULVERT



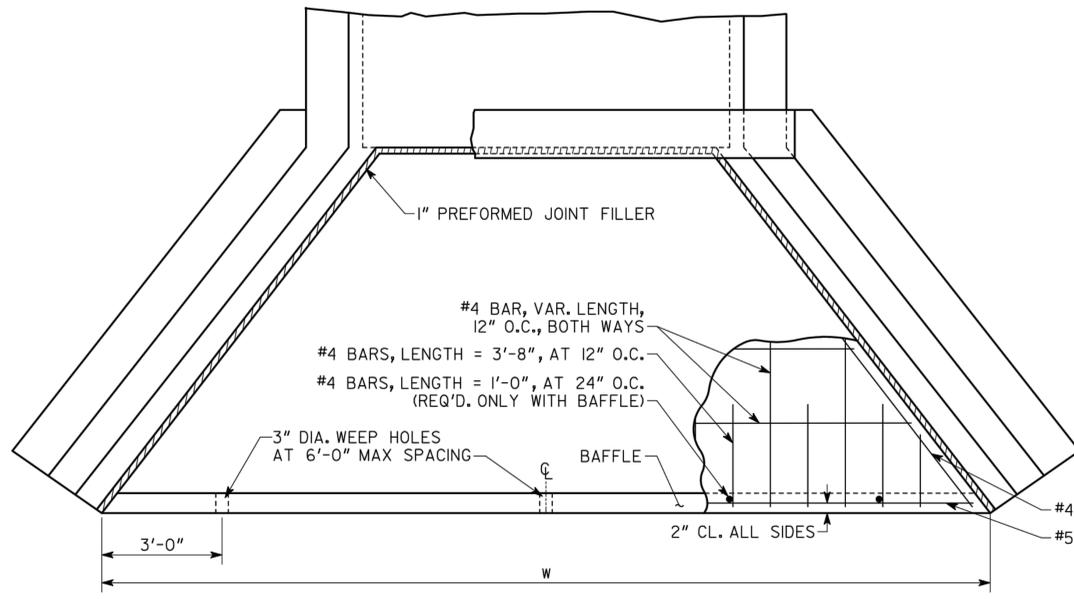
ELEVATION VIEW OF APRON

NOTE: 2" CL MIN. ON ALL SIDES UNLESS OTHERWISE NOTED.
SEE BOX CULVERT STANDARDS FOR DETAILS NOT SHOWN.
END OF EMBEDDED CULVERT APRON (NOT SHOWN) HAS THE SAME MINIMUM BACKFILL AS BARREL.



BAFFLE DETAIL

NOTE: CONSTRUCT BAFFLES FROM CLASS AA CONCRETE, MAY BE PRECAST OR CAST IN PLACE.
USE BAFFLES ON APRONS AT OUTLETS OF PIPES AND BOX CULVERTS AND IN PAVED DITCHES OR ELSEWHERE AT LOCATIONS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.



PLAN VIEW OF APRON

GENERAL NOTES

- SPECIFICATIONS: GEORGIA STANDARD, CURRENT EDITION & SUPPLEMENTS THERETO.
- CONCRETE APRONS AND BAFFLES ARE REQUIRED AT ALL OUTLETS OF ALL BOX CULVERT DRAINS. APRON IS NOT TO BE OMITTED AT OUTLETS UNLESS THE ENGINEER DETERMINES THAT BEDROCK WILL PREVENT EROSION AND MAKE THE APRON DIFFICULT TO CONSTRUCT. APRONS (WITHOUT BAFFLES) ARE USED AT INLETS ONLY IF PLANS SPECIFY.
- DETAILS HERESHOWN APPLY TO LRFD STANDARD BOX CULVERTS.
- ALL CONCRETE SHALL BE CLASS "AA" CONCRETE.
- SEE SEPARATE STANDARDS FOR DETAILS OF BOX CULVERTS, WINGWALLS, PARAPETS, ETC.

DESIGN DATA

SPECIFICATIONS - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014
LOADING - HL - 93.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
STANDARD	
CONCRETE BOX CULVERT APRONS AND BAFFLES DETAIL	
NO SCALE	SEPTEMBER 2017
DES. WEI (SUBMITTED) <i>E.A. St...</i>	NUMBER
DRW. EJC	2406
TRA. (APPROVED) <i>Margaret B. Puzelo</i>	SHEET 1 OF 2
CHK. EJC	CHIEF ENGINEER

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF



GSVCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000

Drawing name: K:\AMT - WaterResources\017983000 - BrannenPondRoad\CAD\Plan - CONSTRUCTION DETAILS.dwg C4-06 CONSTRUCTION DETAILS Jul 05, 2024 11:28am by: natally.figueroa

Drawing name: K:\MT -WaterResources\01798300 - BranranenPondRoad\CAD\Plan_Sheets\C4-07 - CONSTRUCTION DETAILS.dwg Jul 05, 2024 11:20am By: natly.figueroa

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

APRON QUANTITIES FOR CONCRETE BOX CULVERTS

S	H	APRON QUANTITIES FOR CONCRETE BOX CULVERTS																								H	S												
		SINGLE 90°			SINGLE 75°			SINGLE 60°			SINGLE 45°			DOUBLE 90°			DOUBLE 75°			DOUBLE 60°			DOUBLE 45°					TRIPLE 90°			TRIPLE 75°			TRIPLE 60°			TRIPLE 45°		
		W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL			W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL	W (FT.)	CU.YDS. CONC.	LBS. STEEL			
4'	3'	11.133	1.27	108	12.831	1.55	127	12.831	1.55	127	16.715	1.95	157	16.715	1.95	157	17.825	2.45	193	17.825	2.45	193	21.133	2.95	232	21.133	2.95	232	22.821	3.35	260	22.821	3.35	260	26.714	3.71	287		
	4'	15.433	2.23	178	17.279	2.58	204	17.279	2.58	204	23.174	3.35	262	23.174	3.35	262	24.433	3.75	290	24.433	3.75	290	28.174	4.49	345	28.174	4.49	345	29.433	4.89	375	29.433	4.89	375	33.174	5.63	429		
	5'	17.033	2.65	209	20.324	3.44	267	20.324	3.44	267	26.244	4.46	320	26.244	4.46	320	27.033	3.85	297	27.033	3.85	297	31.243	5.42	413	31.243	5.42	413	32.033	5.85	385	32.033	5.85	385	36.243	6.69	506		
	6'	18.633	3.09	240	22.109	3.99	307	22.109	3.99	307	29.386	5.06	385	29.386	5.06	385	23.633	4.39	335	23.633	4.39	335	27.107	5.44	413	27.107	5.44	413	28.551	5.98	452	34.386	6.45	488	28.633	5.69	431	32.106	6.88
5'	3'	12.133	1.44	121	13.830	1.73	140	13.830	1.73	140	17.715	2.13	170	17.715	2.13	170	18.133	2.44	195	18.133	2.44	195	21.433	3.45	269	21.433	3.45	269	25.820	3.89	299	25.820	3.89	299	29.714	4.24	326		
	4'	16.433	2.45	194	18.278	2.82	222	18.278	2.82	222	24.174	3.58	279	24.174	3.58	279	22.433	3.77	291	22.433	3.77	291	24.274	4.21	324	24.274	4.21	324	30.174	4.95	379	28.433	5.10	388	30.272	5.61	426		
	5'	18.083	2.89	227	21.324	3.71	286	21.324	3.71	286	27.244	4.41	339	27.244	4.41	339	24.033	4.33	333	24.033	4.33	333	27.322	5.32	404	27.322	5.32	404	33.243	5.93	450	30.033	5.77	438	33.320	6.93	522		
	6'	19.633	3.35	259	23.108	4.28	328	23.108	4.28	328	30.386	5.33	406	30.386	5.33	406	25.633	4.91	373	25.633	4.91	373	29.107	6.01	455	29.107	6.01	455	36.386	7.01	528	31.633	6.47	487	35.105	7.75	582		
6'	3'	13.133	1.61	133	14.828	1.91	153	14.828	1.91	153	18.715	2.30	183	18.715	2.30	183	20.833	2.78	220	20.833	2.78	220	21.822	3.17	246	21.822	3.17	246	25.714	3.53	274	27.133	3.95	306	28.818	4.43	339		
	4'	17.433	2.67	210	19.278	3.05	238	19.278	3.05	238	25.174	3.81	295	25.174	3.81	295	24.433	4.21	324	24.433	4.21	324	26.273	4.68	358	26.273	4.68	358	32.174	5.41	412	31.433	5.76	436	33.271	6.30	477		
	5'	19.033	3.13	244	22.323	3.98	306	22.323	3.98	306	28.244	4.66	358	28.244	4.66	358	26.033	4.81	368	26.033	4.81	368	29.321	5.86	443	29.321	5.86	443	35.243	6.44	487	33.033	6.49	491	36.320	7.74	581		
	6'	20.633	3.61	278	24.108	4.57	350	24.108	4.57	350	31.386	5.61	426	31.386	5.61	426	27.633	5.43	411	27.633	5.43	411	31.106	6.59	498	31.106	6.59	498	38.386	7.57	569	34.633	7.25	545	38.105	8.62	646		
7'	3'	22.233	4.13	317	25.552	5.06	384	25.552	5.06	384	34.653	6.61	499	34.653	6.61	499	29.233	6.09	460	29.233	6.09	460	32.550	7.21	541	32.550	7.21	541	35.379	8.66	646	41.652	8.74	653	36.233	8.04	603		
	4'	23.833	4.68	355	27.397	5.74	434	27.397	5.74	434	30.988	7.17	537	30.988	7.17	537	30.833	6.77	509	30.833	6.77	509	34.396	8.04	602	34.396	8.04	602	37.986	9.76	725	44.753	10.00	745	37.833	8.87	661		
	5'	18.433	2.89	227	20.277	3.28	256	20.277	3.28	256	26.174	4.04	312	26.174	4.04	312	26.433	4.65	356	26.433	4.65	356	28.272	5.14	392	28.272	5.14	392	34.174	5.86	446	34.433	6.42	485					
	6'	20.033	3.37	262	23.323	4.24	325	23.323	4.24	325	29.243	4.92	376	29.243	4.92	376	28.033	5.29	403	28.033	5.29	403	31.321	6.39	483	31.321	6.39	483	37.243	6.94	524	36.033	7.21	544					
8'	3'	23.233	4.41	337	26.552	5.37	407	26.552	5.37	407	32.386	5.89	447	32.386	5.89	447	29.633	5.95	449	29.633	5.95	449	33.106	7.17	540	33.106	7.17	540	34.550	7.82	586	40.386	8.12	610					
	4'	24.833	4.98	378	28.397	6.07	458	28.397	6.07	458	31.987	7.54	564	31.987	7.54	564	32.833	7.37	552	32.833	7.37	552	36.395	8.69	650	36.395	8.69	650	39.985	10.50	779	46.753	10.65	793					
	5'	19.433	3.11	242	21.276	3.51	272	21.276	3.51	272	27.174	4.27	328	27.174	4.27	328	28.433	5.10	388	28.433	5.10	388	30.272	5.61	426	30.272	5.61	426	36.174	6.32	479	37.433	7.08	533					
	6'	21.033	3.61	280	24.323	4.51	345	24.323	4.51	345	30.243	5.17	395	30.243	5.17	395	30.033	5.77	438	30.033	5.77	438	33.320	6.93	522	33.320	6.93	522	39.243	7.45	561	39.033	7.93	596					
9'	3'	22.633	4.13	316	26.107	5.15	392	26.107	5.15	392	33.386	6.17	467	33.386	6.17	467	31.633	6.47	487	31.633	6.47	487	35.105	7.75	582	35.105	7.75	582	36.549	8.43	631	42.386	8.68	651					
	4'	24.233	4.69	358	27.552	5.68	429	27.552	5.68	429	30.741	6.94	521	30.741	6.94	521	36.653	7.22	543	36.653	7.22	543	33.233	7.20	542	33.233	7.20	542	42.233	9.72	726	45.548	11.19	832					
	5'	25.833	5.28	399	29.397	6.40	482	29.397	6.40	482	32.987	7.91	591	32.987	7.91	591	39.753	8.35	625	39.753	8.35	625	34.833	7.97	596	34.833	7.97	596	38.395	9.35	698	41.985	11.24	833					
	6'	27.333	5.86	443	31.142	7.11	535	31.142	7.11	535	35.233	8.94	668	35.233	8.94	668	43.040	9.64	720	43.040	9.64	720	36.333	8.72	652	36.333	8.72	652	40.140	10.25	764								
10'	3'	28.833	6.46	486	32.666	7.78	582	32.666	7.78	582	37.379	9.98	743	37.379	9.98	743	46.141	10.93	815	46.141	10.93	815	37.833	9.49	706	37.833	9.49	706	46.378	13.77	1019	55.141	14.35	1064					
	4'	20.433	3.33	259	22.275	3.75	290	22.275	3.75	290	28.174	4.49	345	28.174	4.49	345	30.433	5.54	421	30.433	5.54	421	32.271	6.07	460	32.271	6.07	460	38.174	6.77	513	40.433	7.74	582					
	5'	22.033	3.85	297	25.322	4.78	365	25.322	4.78	365	31.243	5.42	413	31.243	5.42	413	32.033	6.25	473	32.033	6.25	473	35.320	7.47	561	35.320	7.47	561	41.243	7.96	598	42.033	8.65	649					
	6'	23.633	4.39	335	27.107	5.44	413	27.107	5.44	413	28.551	5.98	452	28.551	5.98	452	34.386	6.45	488	34.386	6.45	488	33.633	6.99	525	33.633	6.99	525	37.105	8.33	625								

NOTE: THE QUANTITIES SHOWN ABOVE ARE FOR OUTLET END APRONS WITH BAFFLES. IF APRONS ARE NEEDED AT INLETS (NOT USUAL), REDUCE THE ABOVE QUANTITIES FOR NO. BAFFLES AS FOLLOWS:
 CONCRETE: REDUCE QUANTITY BY W x 0.0092 CU.YDS./FT.
 STEEL: REDUCE QUANTITY BY W x 0.334 LBS./LIN.FT.

S = CLEAR SPAN OF BOX CULVERT
 H = CLEAR HEIGHT (RISE) OF BOX CULVERT

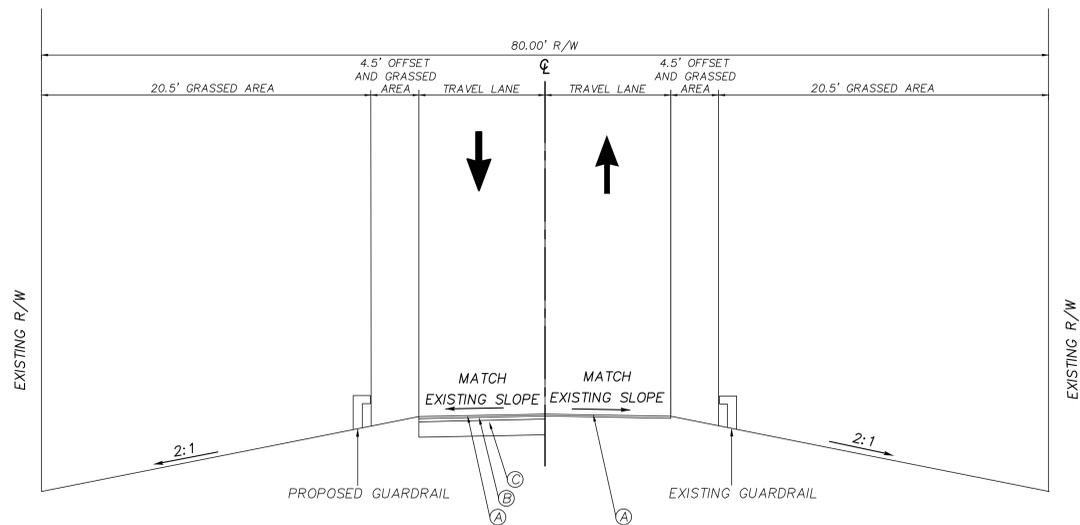
DATE		DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA	
REVISION		STANDARD	
BY		CONCRETE BOX CULVERT APRONS AND BAFFLES DETAIL	
NO SCALE		SEPTEMBER 2017	
DES. WEL DRW. EJC	(SUBMITTED) <i>[Signature]</i>	STATE DESIGN POLICY ENGINEER	NUMBER 2406
TRA. _____	(APPROVED) <i>[Signature]</i>	CHIEF ENGINEER	SHEET 2 OF 2
CHK. EJC			

Final - FOR CONSTRUCTION

Kimley-Horn
 © 2024 KIMLEY-HORN AND ASSOCIATES, INC.
 1200 PEACH-TREE STREET, NE SUITE 800
 ATLANTA, GA 30341
 PHONE (404) 414-3700
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS		
2	100% CONSTRUCTION DOCUMENTS		
3	REVISION 01		



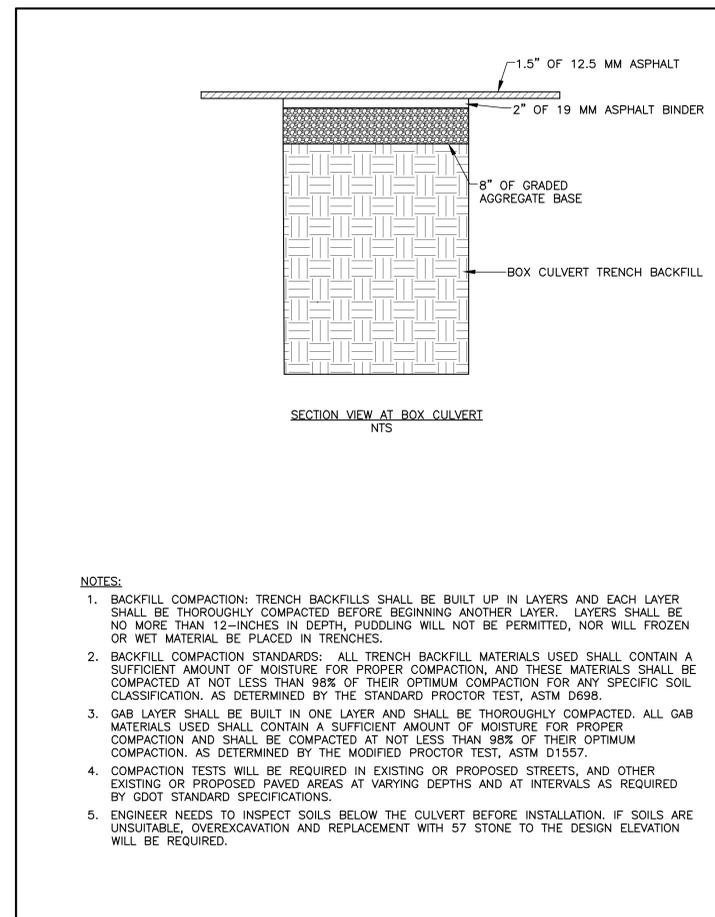
PAVEMENT TYPICAL SECTION VIEW LOOKING WEST

REQUIRED PAVEMENT

- Ⓐ 12.5MM ASPH CONC (165 LB/SY) (1.5")
- Ⓑ ASPH CONC 19MM SUPERPAVE, GP 2, INCL BITUM MATL & H LIME (220 LB/SY) (2.0")
- Ⓒ GR AGGR BASE CRS INCL MATL (8")

NOTES

1. PROPOSED ROADWAY WIDTH TO MATCH EXISTING PAVEMENT WIDTH.
2. THE TYPICAL SECTION DOES NOT APPLY TO PROPOSED ROAD STATION 0+50.6 TO 0+80.8 WHERE FULL DEPTH REMOVAL OF ASPHALT PAVEMENT AS WELL AS TRENCHING FOR THE PROPOSED BOX CULVERT WILL OCCUR FOR FULL WIDTH OF PAVEMENT. SEE SECTION VIEW AT BOX CULVERT DETAIL TO THE RIGHT.
3. THE TYPICAL SECTION APPLIES TO PROPOSED ROAD STATION 0+00 TO 0+50.6 AND 0+80 TO 3+00.
4. GUARDRAIL OFFSET MINIMUM PER GDOT DESIGN MANUAL IS 2' FROM SHOULDER. THE PROPOSED GUARDRAIL IS 4.5' FROM EDGE OF PAVEMENT MATCHING EXISTING OFFSET.



SECTION VIEW AT BOX CULVERT
NTS

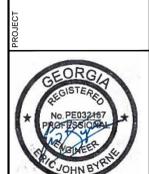
NOTES:

1. BACKFILL COMPACTION: TRENCH BACKFILLS SHALL BE BUILT UP IN LAYERS AND EACH LAYER SHALL BE THOROUGHLY COMPACTED BEFORE BEGINNING ANOTHER LAYER. LAYERS SHALL BE NO MORE THAN 12-INCHES IN DEPTH, PUDDLING WILL NOT BE PERMITTED, NOR WILL FROZEN OR WET MATERIAL BE PLACED IN TRENCHES.
2. BACKFILL COMPACTION STANDARDS: ALL TRENCH BACKFILL MATERIALS USED SHALL CONTAIN A SUFFICIENT AMOUNT OF MOISTURE FOR PROPER COMPACTION, AND THESE MATERIALS SHALL BE COMPACTED AT NOT LESS THAN 98% OF THEIR OPTIMUM COMPACTION FOR ANY SPECIFIC SOIL CLASSIFICATION, AS DETERMINED BY THE STANDARD PROCTOR TEST, ASTM D698.
3. GAB LAYER SHALL BE BUILT IN ONE LAYER AND SHALL BE THOROUGHLY COMPACTED. ALL GAB MATERIALS USED SHALL CONTAIN A SUFFICIENT AMOUNT OF MOISTURE FOR PROPER COMPACTION AND SHALL BE COMPACTED AT NOT LESS THAN 98% OF THEIR OPTIMUM COMPACTION, AS DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D1557.
4. COMPACTION TESTS WILL BE REQUIRED IN EXISTING OR PROPOSED STREETS, AND OTHER EXISTING OR PROPOSED PAVED AREAS AT VARYING DEPTHS AND AT INTERVALS AS REQUIRED BY GDOT STANDARD SPECIFICATIONS.
5. ENGINEER NEEDS TO INSPECT SOILS BELOW THE CULVERT BEFORE INSTALLATION. IF SOILS ARE UNSUITABLE, OVEREXCAVATION AND REPLACEMENT WITH 57 STONE TO THE DESIGN ELEVATION WILL BE REQUIRED.

Drawing name: K:\MT -WaterResources\017983000 - BranranPondRoad\CAD\Plan_Sheets\C4-08 - CONSTRUCTION DETAILS.dwg C4-08 CONSTRUCTION DETAILS Jul 05, 2024 11:21am by: natashya.figueroa

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NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/20/2024	NF
3	REVISION 01	07/05/2024	NF

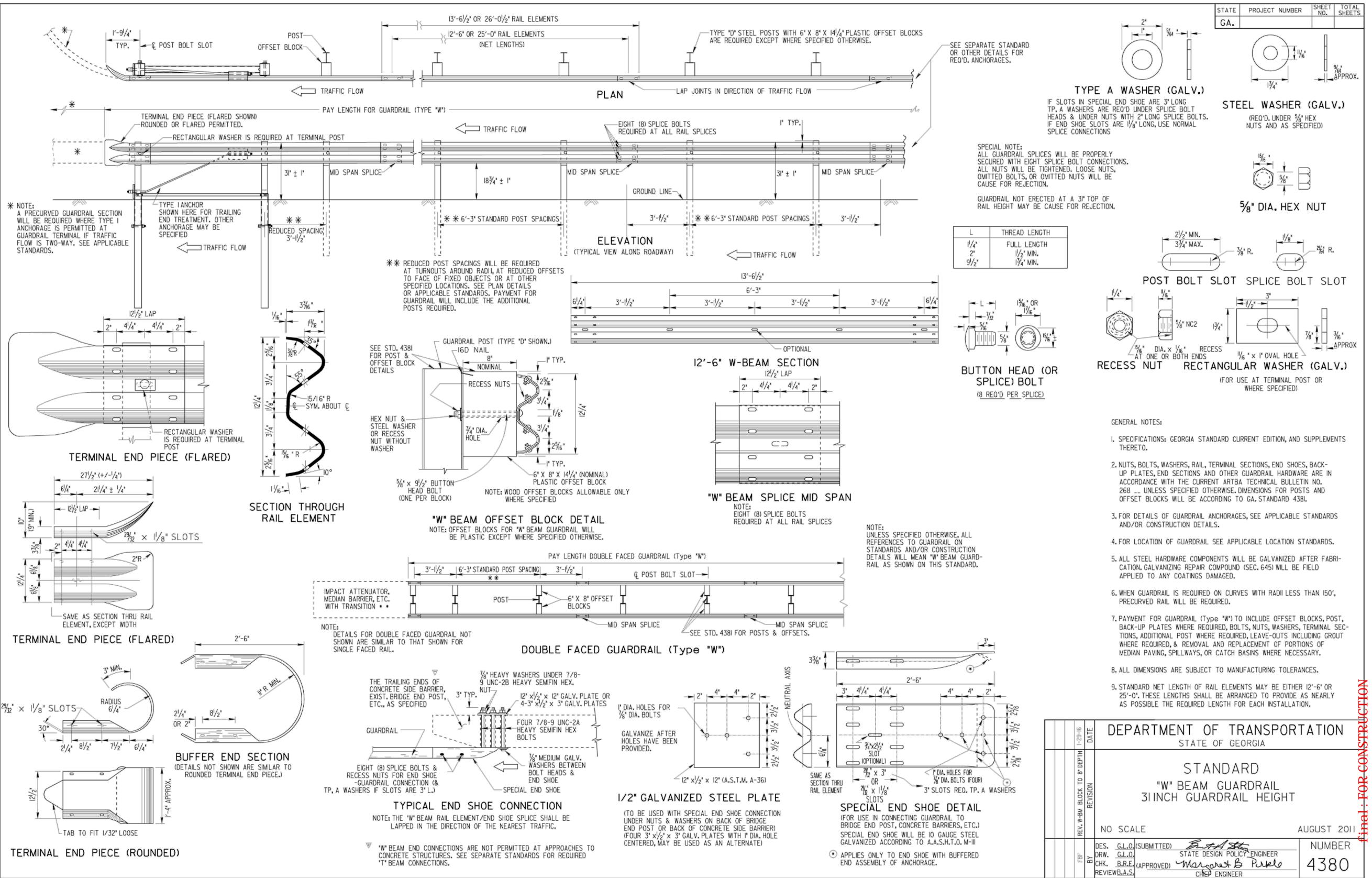


GSVCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000

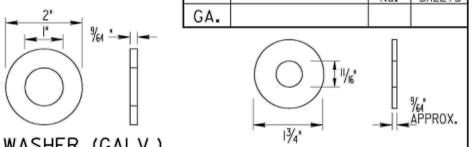
CONSTRUCTION DETAILS

SHEET NUMBER
C4-08

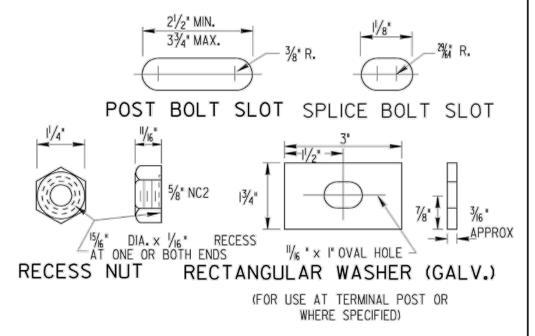
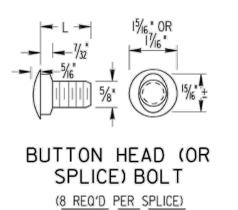
final : FOR CONSTRUCTION



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



L	THREAD LENGTH
1/4"	FULL LENGTH
2"	1/2" MIN.
9/2"	1 3/4" MIN.



DEPARTMENT OF TRANSPORTATION
 STATE OF GEORGIA

STANDARD
 "W" BEAM GUARDRAIL
 31 INCH GUARDRAIL HEIGHT

NO SCALE AUGUST 2011

DES. G.L.O. (SUBMITTED)	NUMBER 4380
DRW. G.L.O.	
CHK. B.R.E. (APPROVED)	
REVIEW B.A.S.	

STATE DESIGN POLICY ENGINEER
 Margaret B. Purke
 CHIEF ENGINEER

Kimley-Horn
 © 2022 KIMLEY-HORN AND ASSOCIATES, INC.
 1200 PEACH-TREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-3700
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/06/2024	NF

BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT



GSVCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000
TITLE	CONSTRUCTION DETAILS
SHEET NUMBER	C4-09

**EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS**

SWCD: REGION 3 (BULLOCH)

Project Name: BRANNEN POND ROAD Address: BRANNEN POND ROAD, BROOKLET, GA 30415

Local Issuing Authority: BULLOCH COUNTY Date on Plans: 06/05/2024

Name & Email of person filling out checklist: NATALY FIGUEROA (NATALY.FIGUEROA@KIMLEY-HORN.COM)

Plan Included
Page # Y/N

TO BE SHOWN ON ES&PC PLAN

- | | | |
|-------|-----|---|
| C5-00 | Y | 1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.
<i>(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)</i> |
| C5-00 | Y | 2 Level II certification number issued by the Commission, signature and seal of the certified design professional.
<i>(Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)</i> |
| N/A | N/A | 3 Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the GAEPD District Office. If GAEPD approves the request to disturb 50 acres or more at any one time, the Plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist and the GAEPD approval letter. *
<i>(A copy of the written approval by GAEPD must be attached to the plan for the Plan to be reviewed.)</i> |
| C5-05 | Y | 4 The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls. |
| C5-05 | Y | 5 Provide the name, address, email address, and phone number of primary permittee. |
| C5-05 | Y | 6 Note total and disturbed acreages of the project or phase under construction. |
| C5-10 | Y | 7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees. |
| C5-10 | Y | 8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions. |
| C5-04 | Y | 9 Description of the nature of construction activity and existing site conditions. |
| C5-05 | Y | 10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary. |
| C5-04 | Y | 11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected. |
| C5-03 | Y | 12 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on Part IV page 19 of the permit. |
| C5-03 | Y | 13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 19 of the permit. * |
| C5-04 | Y | 14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation."
in accordance with Part IV.A.5 page 25 of the permit. * |
| C5-04 | Y | 15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wretched vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits." |
| C5-10 | N | 16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required. |
| C5-04 | Y | 17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." * |

CLIENT	DATE	BY
1 100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2 100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3 REVISION 01	07/05/2024	NF
No. REVISION DESCRIPTIONS		

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT



GSWCC CERT. (LEVEL II)	0000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000
TITLE	EROSION CONTROL NOTES
SHEET NUMBER	C5-00

final : FOR CONSTRUCTION



Drawing name: K:\MT -WaterResources\017983000 -BrannenPondRoad\CAD\Plan_Sheets\C5-01 -EROSION CONTROL NOTES.dwg C5-01 EROSION CONTROL NOTES Jul 05, 2024 11:21am by: natally.iguera

- | | |
|-------|---|
| C5-04 | Y |
|-------|---|

 18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
- | | |
|-------|---|
| C5-04 | Y |
|-------|---|

 19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
- | | |
|-------|---|
| C5-04 | Y |
|-------|---|

 20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
- | | |
|-------|---|
| C5-04 | Y |
|-------|---|

 21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in Item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 25 Provide BMPs for the remediation of all petroleum spills and leaks.
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 27 Description of practices to provide cover for building materials and building products on site. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 28 Description of the practices that will be used to reduce the pollutants in storm water discharges. *
- | | |
|-------|---|
| C5-05 | Y |
|-------|---|

 29 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 30 Provide complete requirements of Inspections and record keeping by the primary permittee. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 31 Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 32 Provide complete details for Retention of Records as per Part IV.F. of the permit. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 33 Description of analytical methods to be used to collect and analyze the samples from each location. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 34 Appendix B rationale for NTU values at all outfall sampling points where applicable. *
- | | |
|-----|-----|
| N/A | N/A |
|-----|-----|

 35 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged. *
- | | |
|-------|---|
| C5-10 | Y |
|-------|---|

 36 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *

final : FOR CONSTRUCTION



GSWCC CERT. (LEVEL II)	000068887
DRAWN BY	NF
DESIGNED BY	PB
REVIEWED BY	EB
DATE	07/05/2024
PROJECT NO.	017983000
TITLE	EROSION CONTROL NOTES
SHEET NUMBER	C5-01

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT

No.	REVISION DESCRIPTIONS	DATE	BY
1	10% CONSTRUCTION DOCUMENTS	05/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3	REVISION 01	07/05/2024	NF

CLIENT
BULLOCH COUNTY

BULLOCH COUNTY
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

Kimley»Horn
© 2022 KIMLEY-HORN AND ASSOCIATES, INC.
1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE (404) 418-3700
WWW.KIMLEY-HORN.COM

Drawing name: K:\MT -WaterResources\017983000 -BrannenPondRoad\CD\Plan_Sheets\C5-02 -EROSION CONTROL NOTES.dwg C5-02 EROSION CONTROL NOTES Jul 05, 2024 11:21am by: natshy.igarcia

C5-10-30

37 Graphic scale and North arrow.

C5-10-30

38 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2% Rolling 2 - 8% Steep 8% +	0.5 or 1 1 or 2 2,5 or 10

N/A

39 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.

N/A

40 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *

N/A

41 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.

N/A

42 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.

SEE HYDRO

43 Delineation and acreage of contributing drainage basins on the project site.

SEE HYDRO

44 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *

C5-02

45 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.

C5-80

46 Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.

C5-10-30

47 Soil series for the project site and their delineation.

C5-10-30

48 The limits of disturbance for each phase of construction.

C5-81

49 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.

C5-10-30, C5-03

50 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.

C5-80-82

51 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.

C5-80

52 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2023

2

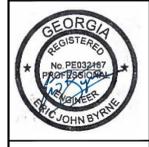


final : FOR CONSTRUCTION

6

No.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/05/2024	NF
3	REVISION 01	07/05/2024	NF

PROJECT
BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT



GSWCC CERT. (LEVEL II)
 0000068887
 DRAWN BY: NF
 DESIGNED BY: PB
 REVIEWED BY: EB
 DATE: 07/05/2024
 PROJECT NO.: 017983000
 TITLE: **EROSION CONTROL NOTES**
 SHEET NUMBER: **C5-02**

Kimley»Horn
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 1200 PEACHTREE STREET, NE SUITE 800
 ATLANTA, GA 30309
 PHONE (404) 418-8700
 WWW.KIMLEY-HORN.COM

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.231.5708

Part IV. EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN

A SITE-SPECIFIC EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN (PLAN) SHALL BE DESIGNED, INSTALLED AND MAINTAINED FOR THE ENTIRE CONSTRUCTION ACTIVITY COVERED BY THIS PERMIT. THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN MUST BE PREPARED BY A DESIGN PROFESSIONAL AS DEFINED BY THIS PERMIT. ALL PERSONS INVOLVED IN PLAN PREPARATION SHALL HAVE COMPLETED THE APPROPRIATE CERTIFICATION COURSE. PURSUANT TO O.C.G.A. 12-7-6 (b), APPROVAL BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION. THE DESIGN PROFESSIONAL PREPARING THE PLAN MUST INCLUDE AND SIGN THE FOLLOWING CERTIFICATION IN THE PLAN.

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION.

06/05/2024 DATE DESIGN PROFESSIONAL'S SIGNATURE

I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL), PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001.

06/05/2024 DATE DESIGN PROFESSIONAL'S SIGNATURE

07/09/2025 EXPIRATION DATE 0000068887 LEVEL II CERTIFICATION NUMBER

THE PLAN SHALL INCLUDE, AS A MINIMUM, BEST MANAGEMENT PRACTICES, INCLUDING SOUND CONSERVATION AND ENGINEERING PRACTICES TO PREVENT AND MINIMIZE EROSION AND RESULTANT SEDIMENTATION, WHICH ARE CONSISTENT WITH, AND NO LESS STRINGENT THAN, THOSE PRACTICES CONTAINED IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA (MANUAL), PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED AND O.C.G.A. 12-7-6, AS WELL AS THE FOLLOWING:

(i). EXCEPT AS PROVIDED IN PART IV.(iii), BELOW, NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 25 FOOT BUFFER ALONG THE BANKS OF ALL STATE WATERS, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION, EXCEPT WHERE THE DIRECTOR HAS DETERMINED TO ALLOW A VARIANCE THAT IS AT LEAST AS PROTECTIVE OF NATURAL RESOURCES AND THE ENVIRONMENT IN ACCORDANCE WITH THE PROVISIONS OF O.C.G.A. 12-7-6, OR WHERE A DRAINAGE STRUCTURE OR ROADWAY DRAINAGE STRUCTURE MUST BE CONSTRUCTED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED IN THE PROJECT PLANS AND SPECIFICATIONS AND ARE IMPLEMENTED, OR ALONG ANY EPHEMERAL STREAM, OR WHERE BULKHEADS AND SEAWALLS MUST BE CONSTRUCTED TO PREVENT THE EROSION OF THE SHORELINE ON LAKE OCONEE OR LAKE SINCLAIR. THE BUFFER SHALL NOT APPLY TO THE FOLLOWING ACTIVITIES PROVIDED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED INTO THE PROJECT PLANS AND SPECIFICATIONS ARE IMPLEMENTED:

- (1) PUBLIC DRINKING WATER SYSTEM RESERVOIRS.
(2) STREAM CROSSINGS FOR WATER LINES AND SEWER LINES, PROVIDED THAT THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER
(3) STREAM CROSSINGS FOR ANY UTILITY LINES OF ANY ELECTRIC MEMBERSHIP CORPORATION OR MUNICIPAL ELECTRICAL SYSTEM OR ANY PUBLIC UTILITY UNDER THE REGULATORY JURISDICTION OF THE PUBLIC SERVICE COMMISSION, ANY CABLE TELEVISION SYSTEM AS DEFINED IN CODE SECTION 36-18-1, OR ANY AGENCY OR INSTRUMENTALITY OF THE UNITED STATES ENGAGED IN THE GENERATION, TRANSMISSION OR DISTRIBUTION OF POWER, PROVIDED THAT: (A) THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER. (B) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. (C) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(4) BUFFER CROSSING FOR FENCES, PROVIDED THAT THE CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. THE PLAN SHALL INCLUDE A DESCRIPTION OF THE STREAM CROSSINGS WITH DETAILS OF THE BUFFER DISTURBANCE INCLUDING AREA AND LENGTH OF BUFFER DISTURBANCE, ESTIMATED LENGTH OF TIME OF BUFFER DISTURBANCE, AND JUSTIFICATION;
(5) RIGHT-OF-WAY POSTS, GUY-WIRES, ANCHORS, SURVEY MARKERS AND THE REPLACEMENT OR MAINTENANCE OF EXISTING UTILITY STRUCTURES WITHIN THE CURRENT RIGHT-OF-WAY UNDERTAKEN OR FINANCED IN WHOLE OR IN PART BY THE DEPARTMENT OF TRANSPORTATION, THE GEORGIA HIGHWAY AUTHORITY OR THE STATE ROAD AND TOLLWAY AUTHORITY OR UNDERTAKEN BY ANY COUNTY OR MUNICIPALITY, PROVIDED THAT: (A) THE AREA OF LAND DISTURBANCE DOES NOT EXCEED 100 SQUARE FEET PER STRUCTURE, (B) THE AREA OF BUFFER VEGETATION TO BE CUT (NOT GRUBBED) DOES NOT EXCEED 1,000 SQUARE FEET PER STRUCTURE, (C) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER AND (D) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(6) BUFFER CROSSING FOR FENCES, PROVIDED THAT THE CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. THE PLAN SHALL INCLUDE A DESCRIPTION OF THE STREAM CROSSINGS WITH DETAILS OF THE BUFFER DISTURBANCE INCLUDING AREA AND LENGTH OF BUFFER DISTURBANCE, ESTIMATED LENGTH OF TIME OF BUFFER DISTURBANCE, AND JUSTIFICATION;
(7) RIGHT-OF-WAY POSTS, GUY-WIRES, ANCHORS, SURVEY MARKERS AND THE REPLACEMENT OR MAINTENANCE OF EXISTING UTILITY STRUCTURES WITHIN THE CURRENT RIGHT-OF-WAY UNDERTAKEN BY ANY COUNTY OR MUNICIPALITY, PROVIDED THAT: (A) THE AREA OF LAND DISTURBANCE DOES NOT EXCEED 100 SQUARE FEET PER STRUCTURE, (B) THE AREA OF BUFFER VEGETATION TO BE CUT (NOT GRUBBED) DOES NOT EXCEED 1,000 SQUARE FEET PER STRUCTURE, (C) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER AND (D) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(8) MAINTENANCE (EXCLUDING DREDGING), REPAIR AND/OR UPGRADE OF SOIL AND WATER CONSERVATION DISTRICT WATERSHED DAMS WHEN UNDER THE TECHNICAL SUPERVISION OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE.

(ii). NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A 50 FOOT BUFFER, AS MEASURED HORIZONTALLY FROM THE POINT WHERE VEGETATION HAS BEEN WRESTED BY NORMAL STREAM FLOW OR WAVE ACTION, ALONG THE BANKS OF ANY STATE WATERS CLASSIFIED AS 'TROUT STREAMS' EXCEPT WHEN APPROVAL IS GRANTED BY THE DIRECTOR FOR ALTERNATE BUFFER REQUIREMENTS IN ACCORDANCE WITH THE PROVISIONS OF O.C.G.A. 12-7-6, OR WHERE A ROADWAY DRAINAGE STRUCTURE MUST BE CONSTRUCTED. PROVIDED, HOWEVER, THAT SMALL SPRINGS AND STREAMS CLASSIFIED AS 'TROUT STREAMS' WHICH DISCHARGE AN AVERAGE ANNUAL FLOW OF 25 GALLONS PER MINUTE OR LESS SHALL HAVE A 25 FOOT BUFFER OR THEY MAY BE PIPED, AT THE DISCRETION OF THE PERMITTEE, PURSUANT TO THE TERMS OF A RULE PROVIDING FOR A GENERAL VARIANCE PROMULGATED BY THE BOARD OF NATURAL RESOURCES INCLUDING NOTIFICATION OF SUCH TO EPD AND THE LOCAL ISSUING AUTHORITY OF THE LOCATION AND EXTENT OF THE PIPING AND PRESCRIBED METHODOLOGY FOR MINIMIZING THE IMPACT OF SUCH PIPING AND FOR MEASURING THE VOLUME OF

WATER DISCHARGED BY THE STREAM. ANY SUCH PIPE MUST STOP SHORT OF THE DOWNSTREAM PERMITTEE'S PROPERTY, AND THE PERMITTEE MUST COMPLY WITH THE BUFFER REQUIREMENT FOR ANY ADJACENT TROUT STREAMS. THE BUFFER SHALL NOT APPLY TO THE FOLLOWING ACTIVITIES PROVIDED THAT ADEQUATE EROSION CONTROL MEASURES ARE INCORPORATED INTO THE PROJECT PLANS AND SPECIFICATIONS ARE IMPLEMENTED:

- (1) PUBLIC DRINKING WATER SYSTEM RESERVOIRS.
(2) STREAM CROSSINGS FOR WATER LINES AND SEWER LINES, PROVIDED THAT THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER
(3) STREAM CROSSINGS FOR ANY UTILITY LINES OF ANY ELECTRIC MEMBERSHIP CORPORATION OR MUNICIPAL ELECTRICAL SYSTEM OR ANY PUBLIC UTILITY UNDER THE REGULATORY JURISDICTION OF THE PUBLIC SERVICE COMMISSION, ANY CABLE TELEVISION SYSTEM AS DEFINED IN CODE SECTION 36-18-1, OR ANY AGENCY OR INSTRUMENTALITY OF THE UNITED STATES ENGAGED IN THE GENERATION, TRANSMISSION OR DISTRIBUTION OF POWER, PROVIDED THAT: (A) THE STREAM CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER. (B) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. (C) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(4) BUFFER CROSSING FOR FENCES, PROVIDED THAT THE CROSSINGS OCCUR AT AN ANGLE, AS MEASURED FROM THE POINT OF CROSSING, WITHIN 25 DEGREES OF PERPENDICULAR TO THE STREAM AND CAUSE A WIDTH OF DISTURBANCE OF NOT MORE THAN 50 FEET WITHIN THE BUFFER, AND NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OF DISTURBED AREAS WITHIN THE BUFFER
(5) STREAM CROSSINGS FOR AERIAL UTILITY LINES, PROVIDED THAT: (A) THE NEW UTILITY LINE RIGHT-OF-WAY WIDTH DOES NOT EXCEED 100 LINEAR FEET, (B) UTILITY LINES ARE ROUTED AND CONSTRUCTED SO AS TO MINIMIZE THE NUMBER OF STREAM CROSSINGS AND DISTURBANCES TO THE BUFFER, (C) ONLY TREES AND TREE DEBRIS ARE REMOVED FROM WITHIN THE BUFFER RESULTING IN ONLY MINOR SOIL EROSION (I.E., DISTURBANCE TO UNDERLYING VEGETATION IS MINIMIZED), AND (D) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER. THE PLAN SHALL INCLUDE DESCRIPTION OF THE STREAM CROSSINGS WITH DETAILS OF THE BUFFER DISTURBANCE, ESTIMATED LENGTH OF TIME OF BUFFER DISTURBANCE, AND JUSTIFICATION,
(6) RIGHT-OF-WAY POSTS, GUY-WIRES, ANCHORS, SURVEY MARKERS AND THE REPLACEMENT OR MAINTENANCE OF EXISTING UTILITY STRUCTURES WITHIN THE CURRENT RIGHT-OF-WAY UNDERTAKEN OR FINANCED IN WHOLE OR IN PART BY THE DEPARTMENT OF TRANSPORTATION, THE GEORGIA HIGHWAY AUTHORITY OR THE STATE ROAD AND TOLLWAY AUTHORITY OR UNDERTAKEN BY ANY COUNTY OR MUNICIPALITY, PROVIDED THAT: (A) THE AREA OF LAND DISTURBANCE DOES NOT EXCEED 100 SQUARE FEET PER STRUCTURE, (B) THE AREA OF BUFFER VEGETATION TO BE CUT (NOT GRUBBED) DOES NOT EXCEED 1,000 SQUARE FEET PER STRUCTURE, (C) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER AND (D) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(7) RIGHT-OF-WAY POSTS, GUY-WIRES, ANCHORS, SURVEY MARKERS AND THE REPLACEMENT OR MAINTENANCE OF EXISTING UTILITY STRUCTURES WITHIN THE CURRENT RIGHT-OF-WAY UNDERTAKEN BY ANY ELECTRIC MEMBERSHIP CORPORATION OR MUNICIPAL ELECTRICAL SYSTEM OR ANY PUBLIC UTILITY UNDER THE REGULATORY JURISDICTION OF THE FEDERAL ENERGY REGULATORY COMMISSION, ANY CABLE TELEVISION SYSTEM AS DEFINED IN CODE SECTION 36-18-1, OR ANY AGENCY OR INSTRUMENTALITY OF THE UNITED STATES ENGAGED IN THE GENERATION, TRANSMISSION OR DISTRIBUTION OF POWER, PROVIDED THAT: (A) THE AREA OF LAND DISTURBANCE DOES NOT EXCEED 100 SQUARE FEET PER STRUCTURE, (B) THE AREA OF BUFFER VEGETATION TO BE CUT (NOT GRUBBED) DOES NOT EXCEED 1,000 SQUARE FEET PER STRUCTURE, (C) NATIVE RIPARIAN VEGETATION IS RE-ESTABLISHED IN ANY BARE OR DISTURBED AREAS WITHIN THE BUFFER AND (D) THE ENTITY IS NOT A SECONDARY PERMITTEE FOR A PROJECT LOCATED WITHIN A COMMON DEVELOPMENT OR SALE UNDER THIS PERMIT.
(8) MAINTENANCE (EXCLUDING DREDGING), REPAIR AND/OR UPGRADE OF SOIL AND WATER CONSERVATION DISTRICT WATERSHED DAMS WHEN UNDER THE TECHNICAL SUPERVISION OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE.

(iii). EXCEPT AS PROVIDED ABOVE, FOR BUFFERS REQUIRED PURSUANT TO PART IV. (i), AND (ii), NO CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED WITHIN A BUFFER AND A BUFFER SHALL REMAIN IN ITS NATURAL, UNDISTURBED, STATE OF VEGETATION UNTIL ALL LAND-DISTURBING ACTIVITIES ON THE CONSTRUCTION SITE ARE COMPLETED. DURING COVERAGE UNDER THIS PERMIT, A BUFFER CANNOT BE THINNED OR TRIMMED OF VEGETATION AND A PROTECTIVE VEGETATIVE COVER MUST REMAIN TO PROTECT WATER QUALITY AND AQUATIC HABITAT AND A NATURAL CANOPY MUST BE LEFT IN SUFFICIENT QUANTITY TO KEEP SHADE ON THE STREAM BED.

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL IDENTIFY ALL POTENTIAL SOURCES OF POLLUTION WHICH MAY REASONABLY BE EXPECTED TO AFFECT THE QUALITY OF STORM WATER DISCHARGES FROM THE CONSTRUCTION SITE. IN ADDITION, THE PLAN SHALL DESCRIBE AND THE APPLICABLE PERMITTEE SHALL ENSURE THE IMPLEMENTATION OF PRACTICES WHICH WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY AT THE SITE AND TO ASSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT. THE APPLICABLE PERMITTEE MUST IMPLEMENT AND MAINTAIN THE PROVISIONS OF THE PLAN REQUIRED UNDER THIS PART AS A CONDITION OF THIS PERMIT.

EXCEPT AS PROVIDED IN PART IV.A.2., A SINGLE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN MUST BE PREPARED BY THE PRIMARY PERMITTEE FOR THE STAND ALONE CONSTRUCTION PROJECT.

A. DEADLINES FOR PLAN PREPARATION AND COMPLIANCE

- 1. EXCEPT AS PROVIDED IN PART IV.A.2., AND PART IV.A.6., THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL BE COMPLETED PRIOR TO SUBMITTING THE NOI AND PRIOR TO CONDUCTING ANY CONSTRUCTION ACTIVITY BY ANY PERMITTEE.
2. FOR CONSTRUCTION ACTIVITIES THAT BEGAN ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT AND WERE SUBJECT TO THE REGULATIONS UNDER THE PREVIOUS PERMIT, THE PERMITTEE(S) SHALL CONTINUE TO OPERATE UNDER THE EXISTING PLAN.
3. FOR CONSTRUCTION ACTIVITIES THAT BEGAN AFTER THE EFFECTIVE DATE OF THIS PERMIT, THE PRIMARY PERMITTEE SHALL BE REQUIRED TO PREPARE THE PLAN FOR THAT PHASE OF THE STAND ALONE DEVELOPMENT THAT CORRESPONDS WITH THE NOI BEING SUBMITTED AND THE PRIMARY PERMITTEE(S) SHALL IMPLEMENT THE PLAN ON OR BEFORE THE DAY CONSTRUCTION ACTIVITIES BEGIN.
4. ADDITIONAL PLAN SUBMITTALS.
a. FOR ALL PROJECTS IDENTIFIED UNDER PART C.1.b., WHICH BEGIN AFTER THE EFFECTIVE DATE OF THIS PERMIT, IN A JURISDICTION WHERE THERE IS NO CERTIFIED LOCAL ISSUING AUTHORITY REGULATING THAT PROJECT, A SINGLE COPY OF THE PLAN MUST BE SUBMITTED TO THE EPD WATERSHED PROTECTION BRANCH AND A SECOND COPY OF THE PLAN MUST BE SUBMITTED TO THE EPD DISTRICT OFFICE PRIOR TO OR CONCURRENT WITH THE NOI SUBMITTAL. THE SECOND COPY OF THE PLAN MAY BE SUBMITTED TO THE APPROPRIATE EPD DISTRICT OFFICE AS A PORTABLE DOCUMENT FORMAT (PDF) FILE ON CD-ROM OR OTHER STORAGE DEVICE. THE EPD WATERSHED PROTECTION BRANCH WILL REVIEW THE PLAN AND THE PERIMETER CONTROL BMPs, INTERMEDIATE GRADING AND DRAINAGE BMPs, AND FINAL BMPs ARE THE SAME, THE PLAN MAY COMBINE ALL OF THE BMPs INTO A SINGLE PHASE PLAN. THE PLAN WILL INCLUDE APPROPRIATE STAGING AND ACCESS REQUIREMENTS FOR CONSTRUCTION EQUIPMENT. PLANS SUBMITTED AFTER THE EFFECTIVE DATE OF THIS PERMIT SHALL LIMIT THE AMOUNT OF DISTURBED AREA TO NO GREATER THAN 50 ACRES AT ANY ONE TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE APPROPRIATE EPD DISTRICT OFFICE ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. EPD WILL APPROVE OR DISAPPROVE SUCH REQUESTS WITHIN 35 DAYS OF RECEIPT. FAILURE OF EPD TO ACT WITHIN 35 DAYS SHALL BE CONSIDERED AN APPROVAL OF SUCH REQUESTS. IF THE EPD DISTRICT OFFICE APPROVES A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME, THE PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE BEST MANAGEMENT PRACTICES LISTED IN PART III.C.2. OF THIS PERMIT.
b. FOR SITES THAT ARE EQUAL TO OR GREATER THAN 50 ACRES OF DISTURBED AREA, REGARDLESS OF THE EXISTENCE OF A CERTIFIED LOCAL ISSUING AUTHORITY IN THE JURISDICTION, ONE OF THE FOLLOWING SUBMISSIONS IS ALSO REQUIRED:
(i). FOR ALL PROJECTS WHICH BEGIN AFTER THE EFFECTIVE DATE OF THIS PERMIT A SINGLE COPY OF THE NOI AND A SINGLE COPY OF THE PLAN SHALL BE SUBMITTED TO THE APPROPRIATE EPD DISTRICT OFFICE. THIS COPY OF THE PLAN MAY BE SUBMITTED TO THE APPROPRIATE EPD DISTRICT OFFICE AS A PORTABLE DOCUMENT FORMAT (PDF) FILE ON CD-ROM OR OTHER STORAGE DEVICE.
(ii). FOR ALL PROJECTS WHICH BEGAN ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT A SINGLE COPY OF THE NOI AND A SINGLE COPY OF THE PLAN, IF AMENDED, SHALL BE SUBMITTED TO THE APPROPRIATE EPD DISTRICT OFFICE. THIS COPY OF

THE PLAN MAY BE SUBMITTED TO THE APPROPRIATE EPD DISTRICT OFFICE AS A PORTABLE DOCUMENT FORMAT (PDF) FILE ON CD-ROM OR OTHER STORAGE DEVICE.

c. FOR ALL PROJECTS WHERE THE CONSTRUCTION ACTIVITY AS INDICATED ON THE EXISTING NOI HAS CHANGED, THE AMENDED PLANS MUST BE SUBMITTED IN ACCORDANCE WITH PART IV.A.4.a. IN ADDITION, THE PERMITTEE MUST FILE A CHANGE OF INFORMATION NOI IN ACCORDANCE WITH PART II.

5. FOR STAND ALONE PROJECTS THAT BEGIN CONSTRUCTION ACTIVITY AFTER THE EFFECTIVE DATE OF THIS PERMIT, THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, OR AN ALTERNATIVE DESIGN PROFESSIONAL APPROVED BY EPD IN WRITING, TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPs HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.

6. FOR STORM- OR EMERGENCY-RELATED REPAIR WORK, THE PERMITTEE SHALL IMPLEMENT APPROPRIATE BMPs AND CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER. IF THE STORM- OR EMERGENCY-RELATED REPAIR WORK WILL NOT BE COMPLETED WITHIN SIXTY (60) DAYS OF COMMENCEMENT OF CONSTRUCTION ACTIVITY, A SINGLE COPY OF THE PLAN SHALL BE SUBMITTED TO EPD AND THE PERMITTEE SHALL COMPLY WITH ALL REQUIREMENTS OF THIS PERMIT ON THE SIXTY-FIRST (61st) DAY.

B. SIGNATURE AND PLAN REVIEW

1. THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL BE SIGNED IN ACCORDANCE WITH PART IV., AND BE RETAINED ON THE SITE OR, IF NOT POSSIBLE, AT A READILY ACCESSIBLE LOCATION) WHICH GENERATES THE STORM WATER DISCHARGE IN ACCORDANCE WITH PART IV.F. OF THIS PERMIT.

2. THE PRIMARY PERMITTEE SHALL MAKE PLANS AVAILABLE UPON REQUEST TO THE EPD; TO DESIGNATED OFFICIALS OF THE LOCAL GOVERNMENT REVIEWING SOIL EROSION AND SEDIMENT CONTROL PLANS, GRADING PLANS, OR STORM WATER MANAGEMENT PLANS; OR IN THE CASE OF A STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY WHICH DISCHARGES THROUGH A MUNICIPAL SEPARATE STORM SEWER SYSTEM WITH AN NPDES PERMIT, TO THE LOCAL GOVERNMENT OPERATING THE MUNICIPAL SEPARATE STORM SEWER SYSTEM.

3. EPD MAY NOTIFY THE PRIMARY PERMITTEE AT ANY TIME THAT THE PLAN DOES NOT MEET ONE OR MORE OF THE MINIMUM REQUIREMENTS OF THIS PART. WITHIN SEVEN (7) DAYS OF SUCH NOTIFICATION (OR AS OTHERWISE PROVIDED BY THE PERMITTEE) THE PERMITTEE SHALL MAKE THE REQUIRED CHANGES TO THE PLAN AND SHALL SUBMIT TO EPD EITHER THE AMENDED PLAN OR A WRITTEN CERTIFICATION THAT THE REQUESTED CHANGES HAVE BEEN MADE.

C. KEEPING PLANS CURRENT.

THE PRIMARY PERMITTEE(S) SHALL AMEND THEIR PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT (I.E., THOSE BMPs WHERE THE DESIGN IS BASED UPON RAINFALL INTENSITY, DURATION AND RETURN FREQUENCY OF STORMS) OR IF THE PLAN PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM SOURCES IDENTIFIED UNDER PART IV.D.3. AMENDMENTS TO THE PLAN MUST BE CERTIFIED BY A DESIGN PROFESSIONAL AS PROVIDED IN THIS PERMIT.

D. CONTENTS OF PLAN.

THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN SHALL INCLUDE, AS A MINIMUM, BEST MANAGEMENT PRACTICES, INCLUDING SOUND CONSERVATION AND ENGINEERING PRACTICES TO PREVENT AND MINIMIZE EROSION AND RESULTANT SEDIMENTATION WHICH ARE CONSISTENT WITH, AND NO LESS STRINGENT THAN, THOSE PRACTICES CONTAINED IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, AS WELL AS THE FOLLOWING:

1. CHECKLIST. EACH PLAN SHALL INCLUDE A COMPLETED EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CHECKLIST ESTABLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED AND AMENDMENTS TO THE APPLICABLE CHECKLIST AS APPROVED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION UP UNTIL THE DATE OF THE NOI SUBMITTAL. THE APPLICABLE CHECKLISTS ARE AVAILABLE ON THE EPD WEBSITE, WWW.GAEPD.ORG.

2. SITE DESCRIPTION. EACH SITE-SPECIFIC PLAN SHALL PROVIDE A DESCRIPTION OF POLLUTANT SOURCES AND OTHER INFORMATION AS INDICATED:

- a. A DESCRIPTION OF THE NATURE OF THE CONSTRUCTION ACTIVITY;
b. A DETAILED DESCRIPTION AND CHART OR TIMELINE OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES WHICH DISTURB SOILS FOR MAJOR PORTIONS OF THE SITE (I.E., INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER BMPs, CLEARING AND GRUBBING ACTIVITIES, EXCAVATION ACTIVITIES, GRADING ACTIVITIES, INFRASTRUCTURE ACTIVITIES, IMMEDIATE AND FINAL STABILIZATION ACTIVITIES);
c. ESTIMATES OF THE TOTAL AREA OF THE SITE AND THE TOTAL AREA OF THE SITE THAT IS EXPECTED TO BE DISTURBED BY EXCAVATION, GRADING, OR OTHER ACTIVITIES;
d. AN ESTIMATE OF THE RUNOFF COEFFICIENT OR PEAK DISCHARGE FLOW OF THE SITE PRIOR TO THE CONSTRUCTION ACTIVITIES AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED AND EXISTING DATA DESCRIBING THE SOIL OR THE QUALITY OF ANY DISCHARGE FROM THE SITE;
e. A SITE-SPECIFIC MAP INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES, AREAS OF SOIL DISTURBANCE, AN OUTLINE OF AREAS WHICH ARE NOT TO BE DISTURBED, THE LOCATION OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS IDENTIFIED IN THE PLAN, THE LOCATION OF AREAS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR, SURFACE WATERS (INCLUDING WETLANDS), AND LOCATIONS WHERE STORM WATER IS DISCHARGED TO A SURFACE WATER; AND
f. IDENTIFY THE RECEIVING WATER(S) AND AREAL EXTENT OF WETLAND ACREAGE AT THE SITE;

3. CONTROLS. EACH PLAN SHALL INCLUDE A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDING: (1) INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs, (2) INTERMEDIATE GRADING AND DRAINAGE BMPs, AND (3) FINAL BMPs. FOR CONSTRUCTION SITES WHERE THERE WILL BE NO MASS GRADING AND THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND THE PERIMETER CONTROL BMPs, INTERMEDIATE GRADING AND DRAINAGE BMPs, AND FINAL BMPs ARE THE SAME, THE PLAN MAY COMBINE ALL OF THE BMPs INTO A SINGLE PHASE PLAN. THE PLAN WILL INCLUDE APPROPRIATE STAGING AND ACCESS REQUIREMENTS FOR CONSTRUCTION EQUIPMENT. PLANS SUBMITTED AFTER THE EFFECTIVE DATE OF THIS PERMIT SHALL LIMIT THE AMOUNT OF DISTURBED AREA TO NO GREATER THAN 50 ACRES AT ANY ONE TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE APPROPRIATE EPD DISTRICT OFFICE ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. EPD WILL APPROVE OR DISAPPROVE SUCH REQUESTS WITHIN 35 DAYS OF RECEIPT. FAILURE OF EPD TO ACT WITHIN 35 DAYS SHALL BE CONSIDERED AN APPROVAL OF SUCH REQUESTS. IF THE EPD DISTRICT OFFICE APPROVES A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME, THE PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE BEST MANAGEMENT PRACTICES LISTED IN PART III.C.2. OF THIS PERMIT.

THE PLAN WILL CLEARLY DESCRIBE FOR EACH MAJOR ACTIVITY IDENTIFIED IN PART IV.D.2.b. APPROPRIATE CONTROL MEASURES AND THE TIMING DURING THE CONSTRUCTION PROCESS THAT THE MEASURES WILL BE IMPLEMENTED. THE PRIMARY PERMITTEE IS ENCOURAGED TO UTILIZE THE DOCUMENT, DEVELOPING YOUR STORMWATER POLLUTION PREVENTION PLAN: A GUIDE FOR CONSTRUCTION SITES, EPA 833-R-060-04, MAY 2007 (WWW.EPA.GOV/NPDES/PUBS/SW PPPP GUIDE.PDF), WHEN PREPARING THE PLAN. THE DESCRIPTION AND IMPLEMENTATION OF CONTROLS SHALL ADDRESS THE FOLLOWING MINIMUM COMPONENTS:

a. EROSION AND SEDIMENT CONTROLS.

(1). STABILIZATION MEASURES. A DESCRIPTION OF INTERIM AND PERMANENT STABILIZATION MEASURES, INCLUDING SITE-SPECIFIC SCHEDULING OF THE IMPLEMENTATION OF THE MEASURES. SITE PLANS SHOULD ENSURE THAT EXISTING VEGETATION IS PRESERVED AND THAT DISTURBED AREAS ARE STABILIZED AS SOON AS FEASIBLE. STABILIZATION MEASURES MAY INCLUDE: TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, GEOTEXTILES, SOD STABILIZATION, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES, PRESERVATION OF MATURE VEGETATION, AND OTHER APPROPRIATE MEASURES. A RECORD OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED SHALL BE INCLUDED IN THE PLAN, EXCEPT AS PROVIDED IN PARAGRAPHS 1 AND 3 THAT DISTURBED AREAS ARE STABILIZED AS SOON AS FEASIBLE. STABILIZATION MEASURES SHOULD BE INITIATED ON THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

(a). WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE IS PRECLUDED BY SNOW COVER OR OTHER ADVERSE WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

(b). WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G., THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.

(2). STRUCTURAL PRACTICES. A DESCRIPTION OF STRUCTURAL PRACTICES TO DIVERT FLOWS FROM EXPOSED SOILS, STORE FLOWS OR OTHERWISE LIMIT RUNOFF AND THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE TO THE DEGREE ATTAINABLE. SUCH PRACTICES MAY INCLUDE SILT FENCES, EARTH DIKES, DRAINAGE SWALES, STRUCTURAL TRAPS, CHECK DAMS, SUBSURFACE DRAINS, PIPE SOLE DRAINS, LEVEL SPREADERS, STORM DRAIN INLET PROTECTION, ROCK OUTLET PROTECTION, REINFORCED SOIL RETAINING SYSTEMS, GABIONS, AND TEMPORARY OR PERMANENT SEDIMENT BASINS. STRUCTURAL PRACTICES SHOULD BE PLACED ON UPLAND SOILS TO THE DEGREE ATTAINABLE. THE INSTALLATION OF THESE DEVICES MAY BE SUBJECT TO SECTION 404 OF THE CWA.

(3). SEDIMENT BASINS. FOR COMMON DRAINAGE LOCATIONS AT A TEMPORARY (OR PERMANENT) SEDIMENT BASIN PROVIDING AT LEAST 1800 CUBIC FEET (67 CUBIC YARDS) OF STORAGE PER ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED UNTIL FINAL STABILIZATION OF THE SITE. THE 1800 CUBIC FEET (67 CUBIC YARDS) OF STORAGE AREA PER ACRE DRAINED DOES NOT APPLY TO FLOWS FROM OFF-SITE AREAS AND FLOWS FROM ON-SITE AREAS THAT ARE EITHER UNDISTURBED OR HAVE UNDERGONE FINAL STABILIZATION WHERE SUCH FLOWS ARE DIVERTED AROUND BOTH THE DISTURBED AREA AND THE SEDIMENT BASIN. FOR MAJOR DRAINAGE LOCATIONS AT A TEMPORARY SEDIMENT BASIN PROVIDING AT LEAST 1800 CUBIC FEET (67 CUBIC YARDS) OF STORAGE PER ACRE DRAINED, OR EQUIVALENT CONTROLS IS NOT ATTAINABLE, SEDIMENT TRAPS, SILT FENCES, WOOD MULCH BERMS OR EQUIVALENT SEDIMENT CONTROLS ARE REQUIRED FOR ALL SIDE SLOPE AND DOWN SLOPE BOUNDARIES OF THE CONSTRUCTION AREA. WHEN THE SEDIMENT FLOWS TO A VOLUME AT MOST OF 22 CUBIC YARDS PER ACRE FOR EACH ACRE OF DRAINAGE AREA, THE SEDIMENT SHALL BE REMOVED TO RESTORE THE ORIGINAL DESIGN VOLUME. THIS SEDIMENT MUST BE PROPERLY DISPOSED. SEDIMENT BASINS MAY NOT BE FEASIBLE AT SOME CONSTRUCTION PROJECTS. CAREFUL CONSIDERATION MUST BE USED TO DETERMINE WHEN A SEDIMENT BASIN CANNOT BE USED AND/OR WHEN 67 CUBIC YARDS OF STORAGE PER ACRE DRAINED IS NOT ATTAINABLE AND A WRITTEN JUSTIFICATION EXPLAINING THE DECISION(S) MUST BE INCLUDED IN THE PLAN. PERENNIAL AND INTERMITTENT WATERS OF THE STATE SHALL NOT BE USED FOR TEMPORARY OR PERMANENT SEDIMENT DETENTION.

WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, PERMITTEES ARE REQUIRED TO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE, UNLESS INFEASIBLE. IF OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE NOT FEASIBLE, A WRITTEN JUSTIFICATION EXPLAINING THIS DECISION MUST BE INCLUDED IN THE PLAN. OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE TEMPORARY BMPs AND MUST BE REMOVED PRIOR TO SUBMITTING A NOTICE OF TERMINATION. FOR CONSTRUCTION ACTIVITIES WHERE THE NOI WAS SUBMITTED PRIOR TO JANUARY 1, 2014, THIS REQUIREMENT OF THE PERMIT IS NOT APPLICABLE.

(4). ALTERNATIVE BMPs. THE USE OF ALTERNATIVE BMPs WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT OR SUPERIOR TO CONVENTIONAL BMPs AS CERTIFIED BY A DESIGN PROFESSIONAL MAY BE ALLOWED (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION).

(5). HIGH PERFORMANCE BMPs. THE USE OF INFILTRATION TRENCHES, SEEP BERMS, SAND FILTERS, DRY WELLS, POLYACRYLAMIDE, ETC. FOR MINIMIZING POINT SOURCE DISCHARGES EXCEPT FOR LARGE RAINFALL EVENTS IS ENCOURAGED.

b. STORM WATER MANAGEMENT. A DESCRIPTION OF MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. STRUCTURAL MEASURES SHOULD BE PLACED ON UPLAND SOILS TO THE DEGREE ATTAINABLE. THE INSTALLATION OF THESE DEVICES MAY BE SUBJECT TO SECTION 404 OF THE CWA. THIS PERMIT ONLY ADDRESSES THE INSTALLATION OF STORM WATER MANAGEMENT MEASURES, AND NOT THE ULTIMATE OPERATION AND MAINTENANCE OF SUCH STRUCTURES AFTER THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION. OPERATORS ARE ONLY RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF STORM WATER MANAGEMENT MEASURES PRIOR TO FINAL STABILIZATION OF THE SITE, AND ARE NOT RESPONSIBLE FOR MAINTENANCE AFTER STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY HAVE BEEN ELIMINATED FROM THE SITE.

(1). SUCH PRACTICES MAY INCLUDE: STORM WATER DETENTION STRUCTURES (INCLUDING WET PONDS); STORM WATER RETENTION STRUCTURES; FLOW ATTENUATION BY USE OF OPEN VEGETATED SWALES AND NATURAL DEPRESSIONS; INFILTRATION OF RUNOFF ON-SITE; AND SEQUENTIAL SYSTEMS (WHICH COMBINE SEVERAL PRACTICES). THE PLAN SHALL INCLUDE AN EXPLANATION OF THE TECHNICAL BASIS USED TO SELECT THE PRACTICES TO CONTROL POLLUTION WHERE FLOWS EXCEED PRE-DEVELOPMENT LEVELS.

(2). VELOCITY DISSIPATION DEVICES SHALL BE PLACED AT DISCHARGE LOCATIONS AND ALONG THE LENGTH OF ANY OUTFALL CHANNEL FOR THE PURPOSE OF PROVIDING A NON-EROSIVE VELOCITY FLOW FROM THE STRUCTURE TO A WATER COURSE SO THAT THE NATURAL PHYSICAL AND BIOLOGICAL CHARACTERISTICS AND FUNCTIONS ARE MAINTAINED AND PROTECTED (E.G., NO SIGNIFICANT CHANGES IN THE HYDROLOGICAL REGIME OF THE RECEIVING WATER(S)).

(3). INSTALLATION AND USE OF GREEN INFRASTRUCTURE APPROACHES AND PRACTICES THAT MIMIC NATURAL PROCESSES AND DIRECT STORM WATER WHERE IT CAN BE INFILTRATED, EVAPOTRANSPIRED OR RE-USED WITH SIGNIFICANT UTILIZATION OF SOILS AND VEGETATION RATHER THAN TRADITIONAL HARDCAPE COLLECTION, CONVEYANCE AND STORAGE STRUCTURES ARE ENCOURAGED TO THE MAXIMUM EXTENT PRACTICABLE. GREEN INFRASTRUCTURE PRACTICES OR APPROACHES INCLUDE PERMEABLE OR POROUS PAVING, VEGETATED SWALES INSTEAD OF CURBS AND GUTTERS, GREEN ROOFS, TREE BOXES, RAIN GARDENS, CONSTRUCTED WETLANDS, INFILTRATION PLANTERS, VEGETATED MEDIAN STRIPS, PROTECTION AND ENHANCEMENT OF RIPARIAN BUFFERS AND FLOODPLAIN, AND THE OVERALL REDUCTION IN SITE DISTURBANCE AND IMPACT AREA. DESIGN INFORMATION ON GREEN INFRASTRUCTURE PRACTICES AND OTHER WAYS TO MANAGE STORM WATER CAN BE FOUND IN THE GEORGIA STORMWATER MANAGEMENT MANUAL (WWW.GEORGIASTORMWATER.COM) AND THE GEORGIA GREEN GROWTH GUIDELINES (WWW.COASTALGADNR.ORG/CMGREEN/GUIDE). ADDITIONAL INFORMATION ON GREEN INFRASTRUCTURE CAN BE FOUND AT WATER.EPA.GOV/INFRASTRUCTURE/ GREENINFRASTRUCTURE/INDEX/CFM.

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BULLOCH COUNTY BRANNEN POND ROAD, BROOKLET, GEORGIA 30415 PHONE: 912.251.5708

CLIENT table with columns: CLIENT, NO., DATE, BY

1. 100% CONSTRUCTION DOCUMENTS
2. 100% CONSTRUCTION DOCUMENTS
3. REVISION D1

PROJECT: BRANNEN POND ROAD, BROOKLET, GEORGIA 30415 12TH DISTRICT

Professional Engineer seal for Eric John Byrne, State of Georgia, License No. 10000068887

DESIGNED BY: PB
REVIEWED BY: EB

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TITLE: EROSION CONTROL NOTES

SHEET NUMBER: C5-03

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c. OTHER CONTROLS.

(1). WASTED DISPOSAL LOCATE WASTE COLLECTION AREAS AWAY FROM STREETS, GUTTERS, WATERCOURSES AND DRAINAGE AREAS, SUCH AS DUMPSTERS, ARE OPEN BEST LOCATED NEAR CONSTRUCTION SITE ENTRANCES TO MINIMIZE TRAFFIC ON DISTURBED SOILS. THE PLAN SHOULD INCLUDE SECONDARY CONTAINMENT AROUND LIQUID WASTE COLLECTION AREAS TO FURTHER MINIMIZE THE LIKELIHOOD OF CONTAMINATED DISCHARGES. SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

(2). OFF-SITE VEHICLE TRACKING OF DIRT, SOILS, AND SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED OR ELIMINATED TO THE MAXIMUM EXTENT PRACTICAL. THE PLAN SHALL INCLUDE THE BEST MANAGEMENT PRACTICE TO BE IMPLEMENTED AT THE SITE OR CONSTRUCTION ACTIVITY.

(3). NOTHING IN THIS PERMIT RELIEVES A PERMITTEE FROM ANY OBLIGATION TO COMPLY WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS OF WASTE DISPOSAL, SANITARY SEWER, SEPTIC AND PETROLEUM STORAGE SYSTEMS.

(4). THE PLAN SHALL INCLUDE BEST MANAGEMENT PRACTICES FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS AS APPROPRIATE.

(5). THE PLAN SHALL INCLUDE BEST MANAGEMENT PRACTICES FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED. ADDITIONAL INFORMATION ABOUT BEST MANAGEMENT PRACTICES FOR CONCRETE WASHOUT IS AVAILABLE AT WWW.EPA.GOV/NPDES/PUBS/CONCRETEWASHOUT.PDF.

(6). ALL PERMITTEES ARE REQUIRED TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING TRENCHES AND EXCAVATIONS. DISCHARGES ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS.

4. INSPECTIONS.

a. PERMITTEE REQUIREMENTS.

(1). EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(2). MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

(3). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(4). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS RECEIVED BY EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).

(5). BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

(6). A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

5. MAINTENANCE.

THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION AND SEDIMENT CONTROL MEASURES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SITE PLAN.

6. SAMPLING REQUIREMENTS.

THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS PARAGRAPH SHALL NOT APPLY TO ANY LAND DISTURBANCE ASSOCIATED WITH THE CONSTRUCTION OF SINGLE-FAMILY HOMES WHICH ARE NOT PART OF A SUBDIVISION OR PLANNED COMMON DEVELOPMENT UNLESS FIRE (5) ACRES OR MORE WILL BE DISTURBED. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST

BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2) A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3) WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4) ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

b. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY 'GRAB SAMPLES' AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED 'NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001' AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

(1) SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.

(2) SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

(3) LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

(4) MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

(5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

c. SAMPLING POINTS.

(1) FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S), OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:

(a) THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY, WHERE APPROPRIATE. SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

(b). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY, WHERE APPROPRIATE. SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

(c). IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNEL(S).

(d). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.

(e). THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

(f). THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

(g). PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).

(h). ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

d. SAMPLING FREQUENCY.

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

(a). FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

(b). IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOTICE OF TERMINATION, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(c). AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPs IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPs ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED.

(d). WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND

(e). EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

7. NON-STORMWATER DISCHARGES.

EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORMWATER LISTED IN PART III.A.2 OF THE PERMIT THAT ARE COMBINED WITH STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE.

E. REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

- a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
c. THE DATE(S) ANALYSES WERE PERFORMED;
d. THE TIME(S) ANALYSES WERE INITIATED;
e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC. USED TO DETERMINE THESE RESULTS;
h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU," AND
i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI.

F. RETENTION OF RECORDS

1. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI:

- a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
d. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV. D.4.A. OF THIS PERMIT;
f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART II.D.2. OF THIS PERMIT; AND
g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2). OF THIS PERMIT.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

PROJECT DESCRIPTION

PROJECT SUMMARY AND NATURE OF CONSTRUCTION ACTIVITY: THE PROJECT WILL IMPROVE THE DRAINAGE CAPACITY OF THE CULVERT CROSSING AND INCREASE STABILITY OF THE ROADWAY AND SHOULDERS. THE PROJECT WILL INCLUDE THE CONSTRUCTION OF A CULVERT REPLACEMENT AND REPAIR STORM DAMAGE AT THE ROAD. THE DISTURBED AREA ON SITE IS 0.55 ACRES, AND THE TOTAL DISTURBED AREA IS 0.55 ACRES.

THE RECEIVING WATER FOR THE PROJECT IS UPPER BLACK CREEK

PRE DEVELOPED RUNOFF COEFFICIENT: 0.30
POST DEVELOPED RUNOFF COEFFICIENT: 0.35

POST-CONSTRUCTION MEASURES FOR CONTROLLING POLLUTANTS IN STORMWATER AND STORMWATER DISCHARGES INCLUDE A FOREBAY AND WETLAND THAT WILL CAPTURE SEDIMENT FROM STORMWATER AND TREAT TSS, TN, TP AND HEAVY METALS.

EROSION, SEDIMENTATION, AND POLLUTION CONTROL NOTES

1. COMPREHENSIVE:

- 14 A. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENT AND PERIMETER CONTROL BMPs AND WITHIN 7 DAYS AFTER INSTALLATION.
15 B. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
17 C. AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
18 D. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
19 E. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

F. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

G. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

H. PROVISIONS TO PREVENT EROSION OF SOIL FROM THE SITE SHALL BE AT A MINIMUM IN CONFORMANCE WITH THE REQUIREMENTS OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, LATEST EDITION, AND BULLOCH COUNTY CODES GOVERNING EROSION AND SEDIMENTATION CONTROL. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

I. FAILURE TO INSTALL, OPERATE, OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED BACK TO THE STANDARDS SPECIFIED IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, CURRENT EDITION, AND BULLOCH COUNTY STANDARDS.

J. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

K. THE CONSTRUCTION OF THE SITE WILL COMMENCE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UPSTREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.

L. CONSTRUCTION EXITS SHALL BE CONSTRUCTED AT EACH POINT OF ENTRY OR EXIT FROM THE SITE AND SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH STONE AS CONDITIONS DEMAND, REPAIR, AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OFF SITE ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. THE PAVED STREET ADJACENT TO THE SITE EXIT WILL BE INSPECTED DAILY FOR TRACKING OF MUD, DIRT, OR ROCK. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPULIN.

M. IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION EXITS, ALL PERIMETER EROSION CONTROL DEVICES AND STORMWATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.

N. ALL SILT BARRIERS MUST BE PLACED AS ACCESS IS OBTAINED DURING CLEARING. NO GRADING SHALL BE DONE UNTIL SILT BARRIER INSTALLATION.

O. EROSION CONTROL DEVICES ARE TO BE INSTALLED AND FULLY OPERATIONAL PRIOR TO ANY DEMOLITION.

P. SILT FENCE MUST MEET THE REQUIREMENTS OF SECTION 171 - TEMPORARY SILT FENCE OF THE DEPARTMENT OF TRANSPORTATION, STATE OF GEORGIA, STANDARD SPECIFICATIONS, CURRENT EDITION, THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, LATEST EDITION, AND BULLOCH COUNTY STANDARDS.

Q. ADDITIONAL EROSION CONTROL MEASURES WILL BE EMPLOYED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS.

2. DURING CONSTRUCTION:

A. ON SITE DUST CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS.

B. ALL OPEN SWALES MUST BE GRASSED AND RIP-RAP MUST BE PLACED AS REQUIRED TO CONTROL EROSION. STONE FOR RIP-RAP SHALL CONSIST OF ROUGH UN-HEWN QUARRY GRANITE AS NEARLY IN RECTANGULAR SECTION AS PRACTICAL. THE MINIMUM SIZE STONE SHALL WEIGH BETWEEN 75 AND 150 POUNDS AND SHALL BE HAND PLACED AS A LOOSE STONE EMBANKMENT.

C. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

D. AT ANY TIME DURING CONSTRUCTION IF IT BECOMES NECESSARY TO PUMP STORMWATER OR GROUNDWATER FROM AN EXCAVATION, THE PUMPED WATER MUST MEET THE TURBIDITY REQUIREMENTS OUTLINED IN THE SITE SPECIFIC EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN. WATER THAT DOES NOT MEET THESE REQUIREMENTS MUST BE FILTERED OR DISCHARGED INTO A TEMPORARY SEDIMENT BASIN UNTIL IT MEETS THE TURBIDITY REQUIREMENTS. ONCE THE TURBIDITY REQUIREMENTS HAVE BEEN MET THE WATER MAY BE DISCHARGED INTO THE STORM SEWER SYSTEM, AS A MINIMUM TURBIDITY TESTS SHOULD BE PERFORMED AS DESCRIBED IN THE PERMIT. THESE SAME REQUIREMENTS APPLY TO ALL AUTHORIZED NON-STORMWATER DISCHARGES UNDER THE STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES (DNR) ENVIRONMENTAL PROTECTION DIVISION (EPD) GENERAL PERMIT NO. GAR 100001. AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

3. SOIL CLEANUP AND CONTROL PRACTICES REGARDING PETROLEUM SPILLS AND LEAKS

A. LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDE, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

C. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.

D. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.

E. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.

F. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.

G. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.

H. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

I. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1,320 GALLONS OF PETROLEUM IS STORED ON SITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY A LICENSED PROFESSIONAL.

final : FOR CONSTRUCTION



GSWCC CERT. LEVEL II
DRAWN BY: NF
DESIGNED BY: PB
REVIEWED BY: EB

DATE: 07/05/2024
PROJECT NO.: 017983000

TITLE: EROSION CONTROL NOTES

SHEET NUMBER: C5-04

Table with columns: No., Description, Date, By. Rows include: 1. 100% CONSTRUCTION DOCUMENTS, 2. 100% CONSTRUCTION DOCUMENTS, 3. REVISION D1.

Client information for Kimley-Horn and Associates, Inc. and Bulloch County, including addresses and phone numbers.

4. PRODUCT SPECIFIC PRACTICES

- A. PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS, AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS, AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHOD WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
- B. PAINTS, FINISHES, AND SOLVENTS - ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORMWATER COLLECTION SYSTEM. EXCESS PRODUCTS, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND STANDARDS.
- C. CONCRETE TRUCK WASHING - NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON SITE.
- D. FERTILIZER/HERBICIDES - THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.
- E. BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

5. WASTE MATERIALS

- A. NO WASTE WILL BE DISPOSED OF INTO STORMWATER INLETS OR WATERS OF THE STATE.
- B. ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE PER WEEK OR MORE OFTEN IF NECESSARY AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ONSITE.
- C. ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE POSTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

6. HAZARDOUS WASTES

- A. ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOBSITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.
- B. THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THIS ESPCP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO HAZARDOUS MATERIALS OR HAZARDOUS WASTES WILL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOBSITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

7. SANITARY WASTES

- A. A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE (1) TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.
- B. ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMPs MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIFICALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORMWATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE, SHEET CS-20, BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.
- C. SANITARY SEWER WILL BE PROVIDED BY SEWER AUTHORITY AT THE COMPLETION OF THIS PROJECT.

8. BUILDING MATERIALS

- A. FOR BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS PRESENT ON THE SITE, PROVIDE COVER (e.g. PLASTIC SHEETING, TEMPORARY ROOFS) TO MINIMIZE THE EXPOSURE OF THESE PRODUCTS TO PRECIPITATION AND TO STORMWATER, OR SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THESE AREAS. MINIMIZATION OF EXPOSURE IS NOT REQUIRED IN CASES WHERE EXPOSURE TO PRECIPITATION AND TO STORMWATER WILL NOT RESULT IN A DISCHARGE OF POLLUTANTS, OR WHERE EXPOSURE OF A SPECIFIC MATERIAL OR PRODUCT POSSES LITTLE RISK TO STORMWATER CONTAMINATION (SUCH AS FINAL PRODUCTS AND MATERIALS INTENDED FOR OUTDOOR USE).

9. OFFSITE VEHICLE TRACKING

- A. A STABILIZED CONSTRUCTION EXIT HAS BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE SHEETS CS-10-30, CS-80 FOR CONSTRUCTION EXIT LOCATIONS AND DETAILS. THE PAVED STREET ADJACENT TO THE SITE EXIT WILL BE INSPECTED DAILY FOR TRACKING OF MUD, DIRT OR ROCK. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARP/AULIN.

EROSION CONTROL LEGEND

VEGETATIVE MEASURES:

Bf	BUFFER ZONE
Cs	COASTAL DUNE STABILIZATION
Ds1	DISTURBED AREA STABILIZATION: (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION: (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION: (WITH PERMANENT VEGETATION)
Ds4	DISTURBED AREA STABILIZATION: (WITH SOODING)
Du	DUST CONTROL ON DISTURBED AREAS
Fi-Co	FLOCCULANTS COAGULANTS
Sb	STREAMBANK STABILIZATION: (USING PERMANENT VEGETATION)
Ss	SLOPE STABILIZATION
Sp	SAMPLING POINT
Tac	TACKIFIERS AND BINDERS

STRUCTURAL MEASURES:

Cd-S	STONE CHECK DAM
Cd-Hb	STRAW-BALE CHECK DAM
Cd-Fs	STRAW-BALE CHECK DAM
Ch-1	CHANNEL STABILIZATION: VEGETATED LINING
Ch-2	CHANNEL STABILIZATION: ROCK RIP-RAP LINING
Ch-3	CHANNEL STABILIZATION: CONCRETE LINING
Co	CONSTRUCTION EXIT
Cr	CONSTRUCTION ROAD STABILIZATION
Dc	STREAM DIVERSION CHANNEL
Di	DIVERSION
Dn1	TEMPORARY DOWNDRAIN STRUCTURE
Dn2	PERMANENT DOWNDRAIN STRUCTURE
Fr	FILTER RING
Ga	GABION
Gr	GRADE STABILIZATION STRUCTURE
Lv	LEVEL SPREADER
Rd	ROCK FILTER DAM
Re	RETAINING WALL
Rt-P	RETROFITTING: PERFORATED HALF-ROUND PIPE WITH STONE FILTER
Rt-B	RETROFITTING: SLOTTED BOARD DAM WITH STONE OR FILTER FABRIC
Sd1-S	SEDIMENT BARRIER - SENSITIVE AREAS
Sd1-NS	SEDIMENT BARRIER - NON SENSITIVE AREAS
Sd1-BB	SEDIMENT BARRIER - BRUSH BARRIER

STRUCTURAL MEASURES (continued):

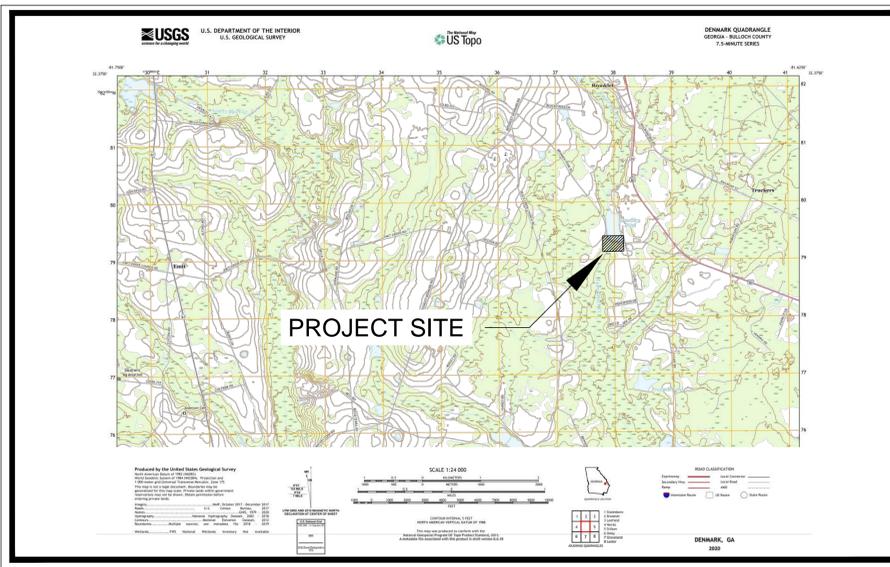
Sd2-F	INLET SEDIMENT TRAP: FILTER FABRIC WITH SUPPORTING FRAME
Sd2-B	INLET SEDIMENT TRAP: BAFFLE BOX
Sd2-Bg	DISTURBED AREA STABILIZATION: BLOCK AND GRAVEL DROP INLET PROTECTION
Sd2-G	DISTURBED AREA STABILIZATION: GRAVEL DROP INLET PROTECTION
Sd2-S	INLET SEDIMENT TRAP: SOIL INLET PROTECTION
Sd2-P	INLET SEDIMENT TRAP: CURB INLET PROTECTION
Sd2-SS	INLET SEDIMENT TRAP: SILT SAVER
Sd3	TEMPORARY SEDIMENT BASIN
Sd4-A	TEMPORARY SEDIMENT TRAP: OVERFLOW
Sd4-B	TEMPORARY SEDIMENT TRAP: COMBINATION STRAW BALE & SILT FENCE OUTLET
Sd4-C	TEMPORARY SEDIMENT TRAP: ROCK OUTLET
Sk	FILTER SURFACE SKIMMER
SpB	SEEP BERM
Sr	TEMPORARY STREAM CROSSING
St	STORM DRAIN OUTLET PROTECTION
Su	SURFACE ROUGHENING
Tc	TURBIDITY CURTAIN
Tp	TOPSOILING
Tr	TREE PROTECTION
Wt	VEGETATED WATERWAY OR STORMWATER CHANNEL

EROSION CONTROL LINETYPES / SYMBOLS

---	TREE PROTECTION FENCE
---	SOIL TYPE DELINEATION
→	FLOW ARROW
---	LIMITS OF DISTURBANCE



FEMA MAP



U.S.G.S. TOPOGRAPHIC MAP
BULLOCH COUNTY, GA QUAD MAP



VICINITY MAP

<p>SITE AREA SUMMARY: TOTAL SITE AREA = 0.55 ACRES TOTAL DISTURBED AREA = 0.55 ACRES</p>	START DATE: 07/2024	END DATE: 07/2025	THIS SCHEDULE IS TO BE USED FOR PERMITTING PURPOSES ONLY. REFER TO APPROVED PROJECT SCHEDULE FOR EXACT CONSTRUCTION SEQUENCING.																																																																																																																																																																																																																																																					
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ACTIVITY SCHEDULE

GSWCC Georgia Soil and Water Conservation Commission

ERIC BYRNE
Level II Certified Design Professional

0000068887
Issued: 07/09/2023 Expires: 07/09/2025

Kimley-Horn

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1200 PEACHTREE STREET, NE SUITE 800
ATLANTA, GA 30309
PHONE: (404) 414-3700
WWW.KIMLEY-HORN.COM

BULLOCH COUNTY

BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF

final : FOR CONSTRUCTION

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT

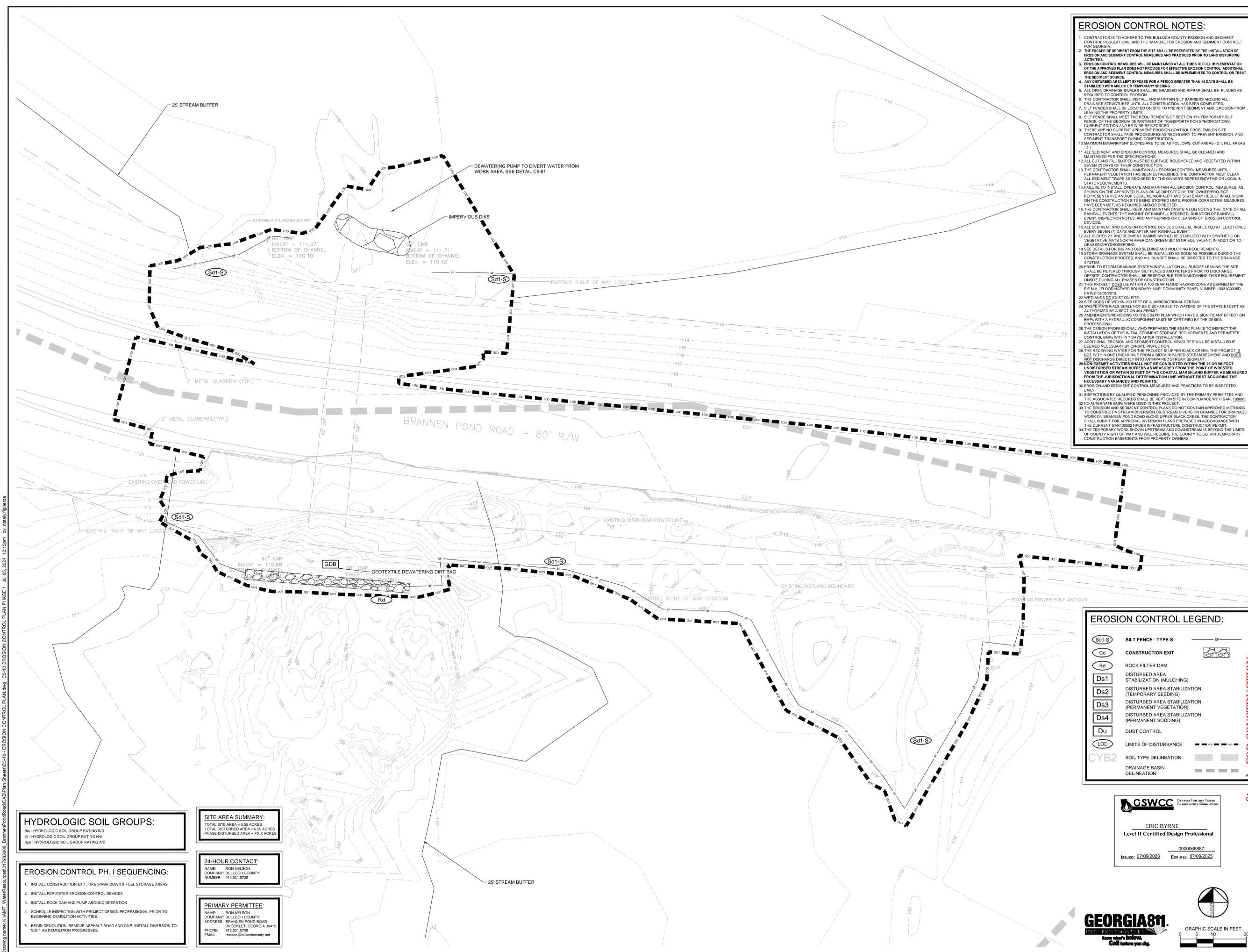
GEORGIA REGISTERED PROFESSIONAL ENGINEER
ERIC JOHN BYRNE

GSWCC CERT. LEVEL II: 0000068887
DRAWN BY: NF
DESIGNED BY: PB
REVIEWED BY: EB
DATE: 07/05/2024
PROJECT NO.: 017983000

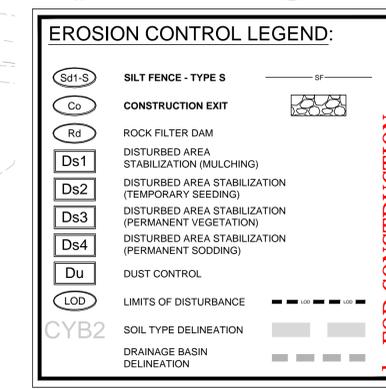
EROSION CONTROL NOTES

SHEET NUMBER: **C5-05**

Drawing name: K:\MT - WaterResources\17983000 - BrannenPondRoad\CADD\Plan - Sheets\C5-10 - EROSION CONTROL PLAN PHASE 1 - July 05, 2024 12:15pm by:nasty.figueras



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 - SILT FENCE SHALL MEET THE REQUIREMENTS OF SECTION 171-TEMPORARY SILT FENCE, OF THE GEORGIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, CURRENT EDITION AND BE WIRE REINFORCED.
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 - SEE DETAILS FOR D62 AND D63 SEEDING AND MULCHING REQUIREMENTS.
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 - THIS PROJECT DOES NOT LIE WITHIN A 100 YEAR FLOOD HAZARD ZONE AS DEFINED BY THE F.E.M.A. "FLOOD HAZARD BOUNDARY MAP" COMMUNITY PANEL NUMBER 13031033SD, DATED 08/09/2019.
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 - WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
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 - INSPECTIONS BY QUALIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH GAR 100002.
 - NO ALTERNATE BMPs WERE USED IN THIS PROJECT.
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GSWCC Georgia Soil and Water Conservation Commission

ERIC BYRNE
Level II Certified Design Professional

Issued: 07/09/2023 Expires: 07/09/2025

0000068887

GEORGIA811
Know what's below. Call before you dig.

GRAPHIC SCALE IN FEET
0 5 10 20

HYDROLOGIC SOIL GROUPS:

Ss - HYDROLOGIC SOIL GROUP RATING S/D
W - HYDROLOGIC SOIL GROUP RATING NA
Rpa - HYDROLOGIC SOIL GROUP RATING A/D

SITE AREA SUMMARY:

TOTAL SITE AREA = 0.35 ACRES
TOTAL DISTURBED AREA = 0.06 ACRES
PHASE DISTURBED AREA = XX.X ACRES

- #### EROSION CONTROL PH. I SEQUENCING:
- INSTALL CONSTRUCTION EXIT, TIRE WASH DOWN & FUEL STORAGE AREAS.
 - INSTALL PERIMETER EROSION CONTROL DEVICES.
 - INSTALL ROCK DAM AND PUMP AROUND OPERATION.
 - SCHEDULE INSPECTION WITH PROJECT DESIGN PROFESSIONAL PRIOR TO BEGINNING DEMOLITION ACTIVITIES.
 - BEGIN DEMOLITION, REMOVE ASPHALT ROAD AND CMP. INSTALL DIVERSION TO Sd1-S AS DEMOLITION PROGRESSES.

24-HOUR CONTACT:

NAME: RON NELSON
COMPANY: BULLOCH COUNTY
NUMBER: 912.531.5708

PRIMARY PERMITTEE:

NAME: RON NELSON
COMPANY: BULLOCH COUNTY
ADDRESS: BRANNEN POND ROAD
BROOKLET, GEORGIA 30415
PHONE: 912.531.5708
EMAIL: rnelson@bullochcounty.net

Kimley Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
1200 PEACHTREE STREET, NE SUITE 800
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PHONE: (404) 418-3700
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BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
PHONE: 912.531.5708

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/07/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/05/2024	NF
3	REVISION 01	07/05/2024	NF

BRANNEN POND ROAD
BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
12TH DISTRICT

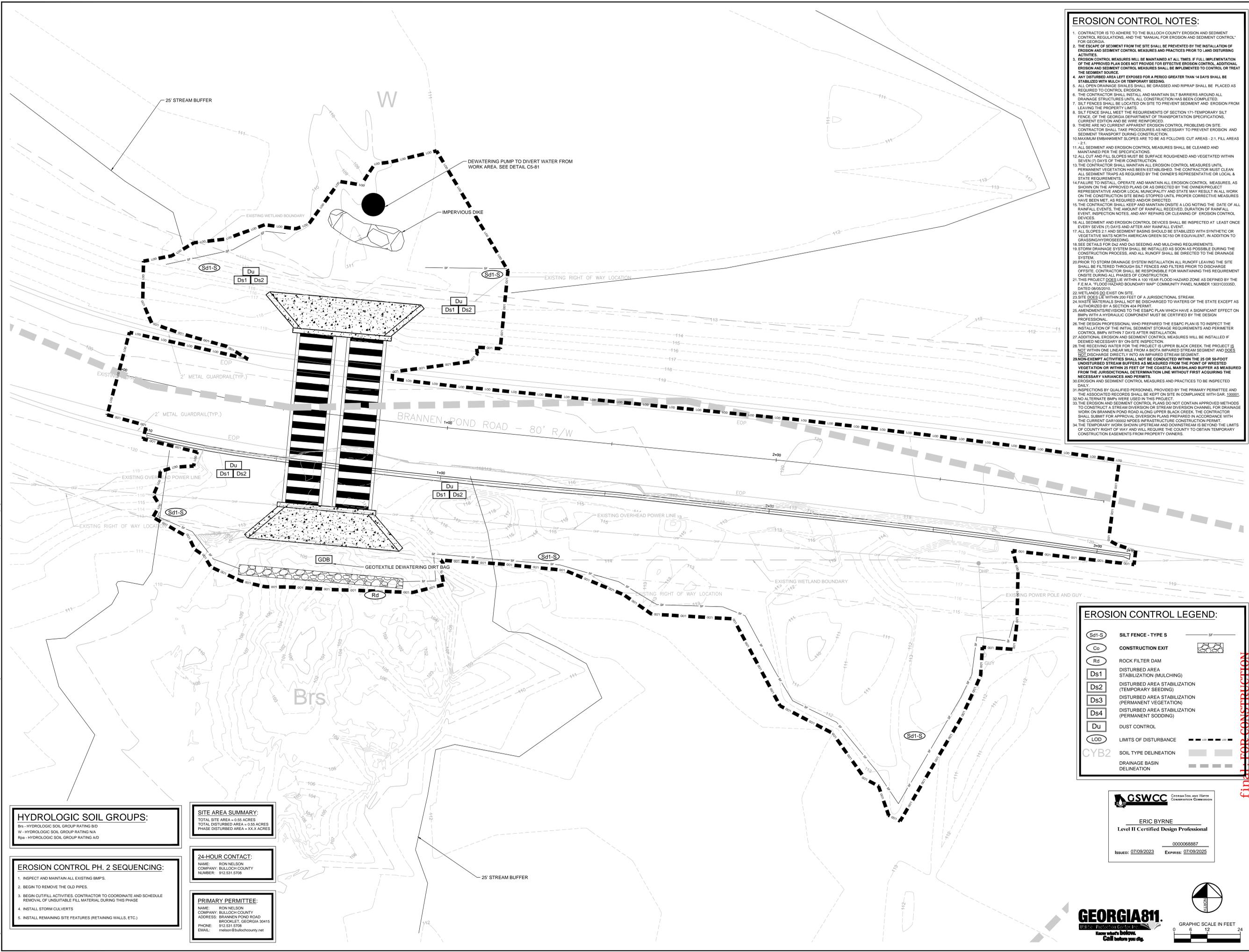
EROSION CONTROL PLAN PHASE 1

SHEET NUMBER: **C5-10**

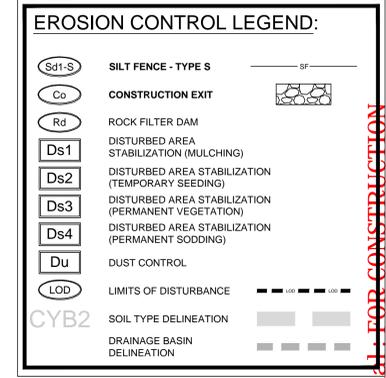
PROJECT: BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
GSWCC CERT. (LEVEL II): 0000068887
DRAWN BY: NF
DESIGNED BY: PB
REVIEWED BY: EB
DATE: 07/05/2024
PROJECT NO.: 017983000
TITLE: EROSION CONTROL PLAN PHASE 1

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Drawing name: K:\AMT - WaterResources\17983000 - BrannenPondRoad\CADD\Plan_Sheets\C5-10 - EROSION CONTROL PLAN PHASE 2 - July 05, 2024 12:15pm by:natly.figures



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GSWCC Georgia Soil and Water Conservation Commission
ERIC BYRNE
 Level II Certified Design Professional
 No. 0000068887
 Issued: 07/09/2023 Expires: 07/09/2025



HYDROLOGIC SOIL GROUPS:

Ss - HYDROLOGIC SOIL GROUP RATING S/D
 W - HYDROLOGIC SOIL GROUP RATING NA
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SITE AREA SUMMARY:

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 BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708
 EMAIL: rnelson@bullochcounty.net

- ### EROSION CONTROL PH. 2 SEQUENCING:
- INSPECT AND MAINTAIN ALL EXISTING BMPs.
 - BEGIN TO REMOVE THE OLD PIPES.
 - BEGIN CUT/FILL ACTIVITIES. CONTRACTOR TO COORDINATE AND SCHEDULE REMOVAL OF UNSUITABLE FILL MATERIAL DURING THIS PHASE.
 - INSTALL STORM CULVERTS
 - INSTALL REMAINING SITE FEATURES (RETAINING WALLS, ETC.)

Kimley Horn
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BRANNEN POND ROAD
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 12TH DISTRICT

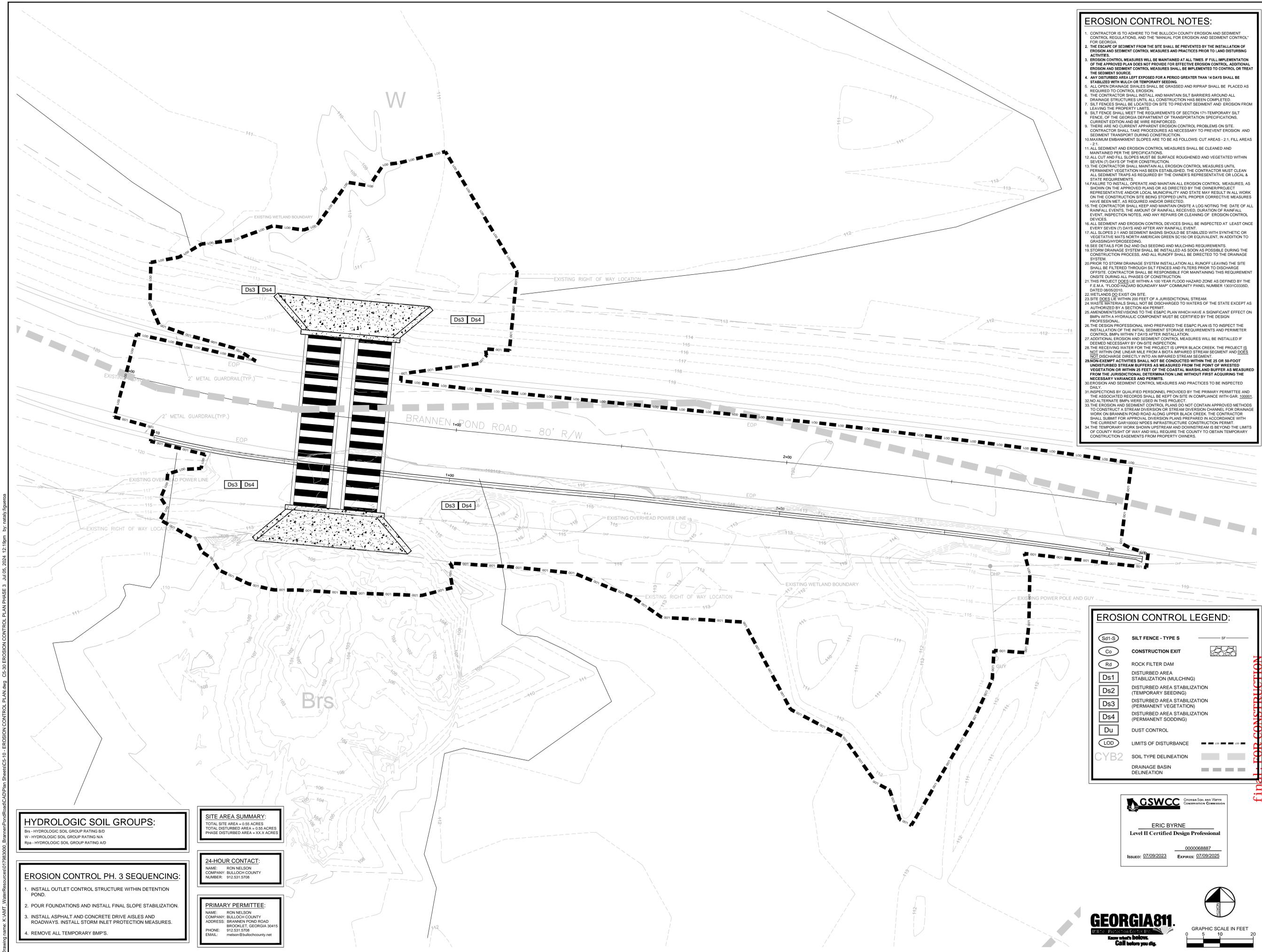
EROSION CONTROL PLAN PHASE 2
 SHEET NUMBER
C5-20

GEORGIA REGISTERED PROFESSIONAL ENGINEER
 ERIC BYRNE

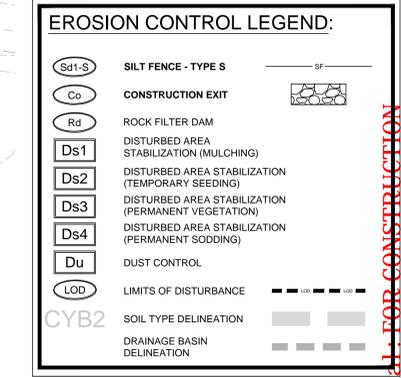
GSWCC CERT. (LEVEL II) 0000068887
 DRAWN BY NF
 DESIGNED BY PB
 REVIEWED BY EB
 DATE 07/05/2024
 PROJECT NO. 017983000
 TITLE

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Drawing name: K:\AMT -WaterResources\071983000 -BrannenPondRoad\CADPlan_Sheets\C5-10 - EROSION CONTROL PLAN PHASE 3 - July 05, 2024 12:19pm by:nasty.figures



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 - WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
 - AMENDMENTS RELATING TO THE ES&P PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPs WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.
 - THE DESIGN PROFESSIONAL WHO PREPARED THE ES&P PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERMITTER CONTROL BMPs WITHIN 14 DAYS AFTER INSTALLATION. STATE MAY RESULT IN ALL WORK ON THE CONSTRUCTION SITE BEING STOPPED UNTIL PROPER CORRECTIVE MEASURES HAVE BEEN MET, AS REQUIRED AND/OR DIRECTED.
 - ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
 - THE RECEIVING WATER FOR THE PROJECT IS UPPER BLACK CREEK. THE PROJECT IS NOT WITHIN ONE LINEAR MILE FROM A BOTH IMPAIRED STREAM SEGMENT AND DOES NOT DISCHARGE DIRECTLY INTO AN IMPAIRED STREAM SEGMENT.
 - NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25 FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.
 - EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES TO BE INSPECTED DAILY.
 - INSPECTIONS BY QUALIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH GAR 100001.
 - NO ALTERNATE BMPs WERE USED IN THIS PROJECT.
 - THE EROSION AND SEDIMENT CONTROL PLANS DO NOT CONTAIN APPROVED METHODS TO CONSTRUCT A STREAM DIVERSION OR STREAM CHANNEL CHANGE FOR DRAINAGE WORK ON BRANNEN POND ROAD ALONG UPPER BLACK CREEK. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL EROSION PLANS PREPARED IN ACCORDANCE WITH THE CURRENT GAR 100002 NPDES INFRASTRUCTURE CONSTRUCTION PERMIT.
 - THE TEMPORARY WORK SHOWN UPSTREAM AND DOWNSTREAM IS BEYOND THE LIMITS OF COUNTY RIGHT OF WAY AND WILL REQUIRE THE COUNTY TO OBTAIN TEMPORARY CONSTRUCTION EASEMENTS FROM PROPERTY OWNERS.



ERIC BYRNE
Level II Certified Design Professional

Issued: 07/09/2023 Expires: 07/09/2025

GSWCC CERT. (LEVEL II) 0000068887

DRAWN BY: NF

DESIGNED BY: PB

REVIEWED BY: EB

DATE: 07/05/2024

PROJECT NO.: 017983000

TITLE: **EROSION CONTROL PLAN PHASE 3**

SHEET NUMBER: **C5-30**

GRAPHIC SCALE IN FEET

HYDROLOGIC SOIL GROUPS:

Brs - HYDROLOGIC SOIL GROUP RATING B/D
 W - HYDROLOGIC SOIL GROUP RATING N/A
 Rps - HYDROLOGIC SOIL GROUP RATINGS A/D

SITE AREA SUMMARY:

TOTAL SITE AREA = 0.35 ACRES
 TOTAL DISTURBED AREA = 0.05 ACRES
 PHASE DISTURBED AREA = XX.X ACRES

24-HOUR CONTACT:

NAME: RON NELSON
 COMPANY: BULLOCH COUNTY
 NUMBER: 912.531.5708

PRIMARY PERMITTEE:

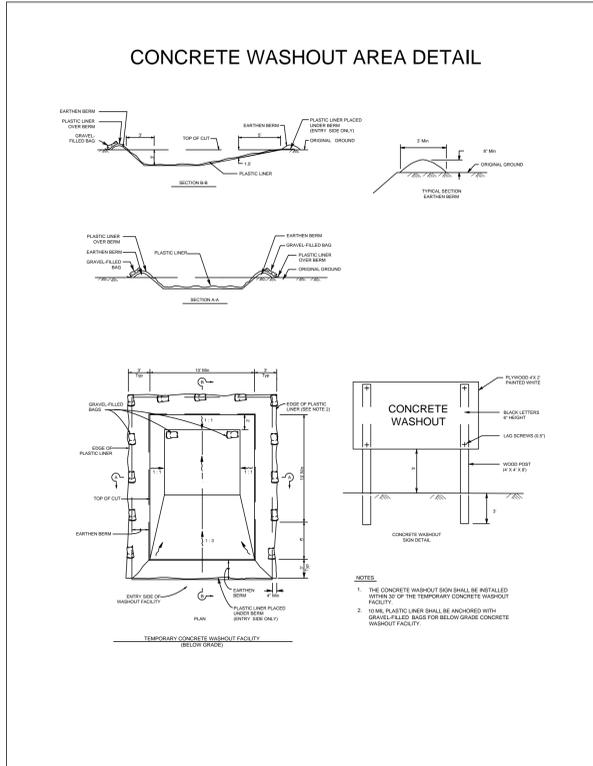
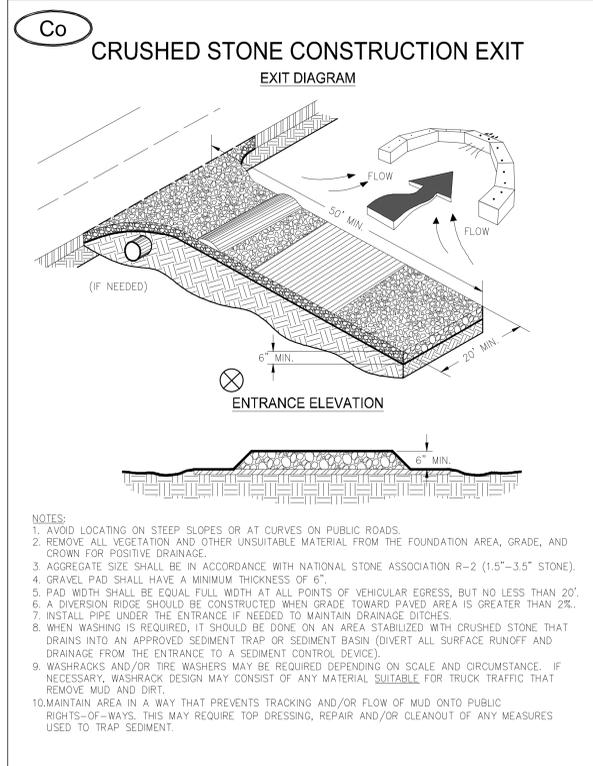
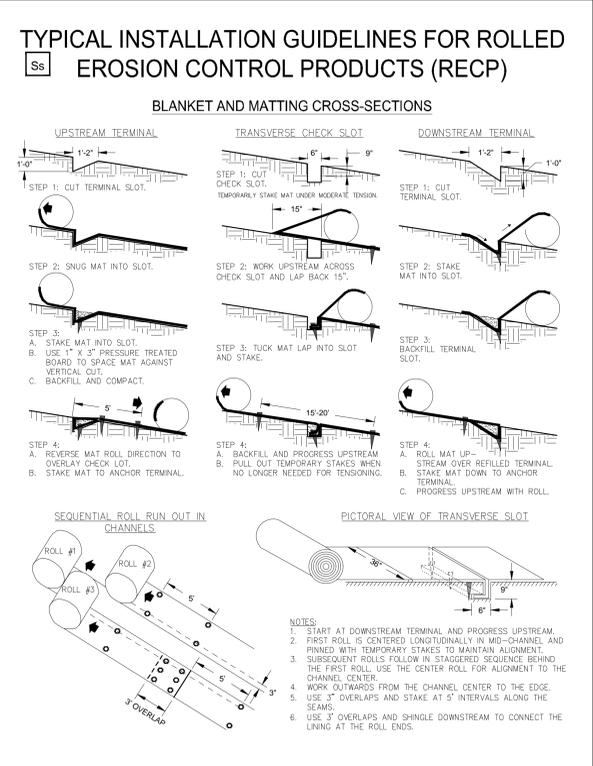
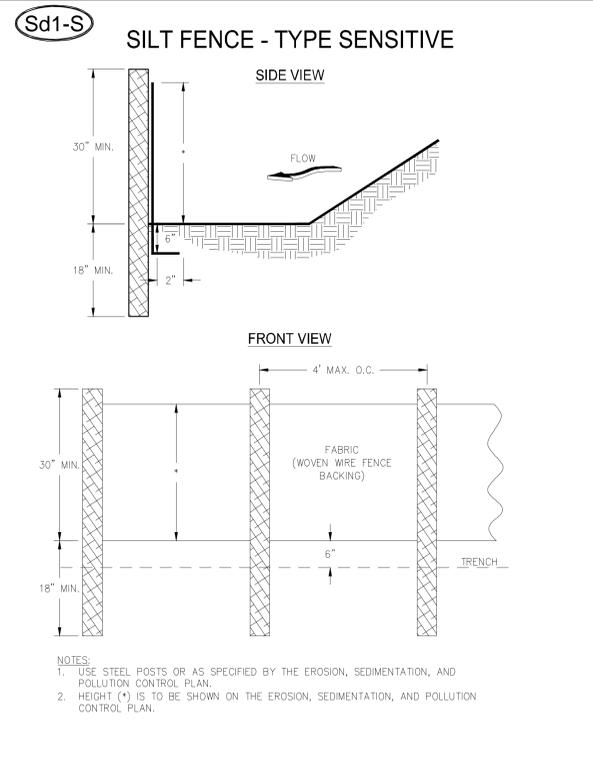
NAME: RON NELSON
 COMPANY: BULLOCH COUNTY
 ADDRESS: BRANNEN POND ROAD
 BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708
 EMAIL: rnelson@bullochcounty.net

- #### EROSION CONTROL PH. 3 SEQUENCING:
- INSTALL OUTLET CONTROL STRUCTURE WITHIN DETENTION POND.
 - POUR FOUNDATIONS AND INSTALL FINAL SLOPE STABILIZATION.
 - INSTALL ASPHALT AND CONCRETE DRIVE AISLES AND ROADWAYS. INSTALL STORM INLET PROTECTION MEASURES.
 - REMOVE ALL TEMPORARY BMP'S.

BULLOCH COUNTY
 BRANNEN POND ROAD, BROOKLET, GEORGIA 30415
 PHONE: 912.531.5708

final FOR CONSTRUCTION

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	08/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	08/15/2024	NF
3	REVISION D1	07/05/2024	NF

Ds1 MULCHING FOR TEMPORARY STABILIZATION WITHOUT VEGETATION

APPLICATION

- DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
- IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, ADD 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT.

SITE PREPARATION

- GRADE TO PERMIT THE USE OF EQUIPMENT FOR APPLYING AND ANCHORING MULCH.
- INSTALL NEEDED EROSION CONTROL MEASURES AS REQUIRED SUCH AS DIKES, DIVERSIONS, BARRIERS, TERRACES AND SEDIMENT BARRIERS.
- LOOSEN COMPACT SOIL TO A MINIMUM DEPTH OF 3 INCHES.

ANCHORING MULCH

- STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK." DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE SHARP ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERECT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION.
- STRAW OR HAY MULCH SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE-5 OR SS-1). THE ASPHALT EMULSION SHALL BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF EMULSIFIED ASPHALT AND 100 GALLONS OF WATER PER TON OF MULCH. TACKIFIERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION TB - TACKIFIERS AND BINDERS. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
- POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

MULCH MATERIALS AND APPLICATION RATES		
MATERIAL	RATE	DEPTH
STRAW OR HAY	2-4" DEEP	
WOOD WASTE, CHIPS, SAW DUST, OR BARK	2-3" DEEP (ABOUT 6-9 TONS/ACRE)	
MATTING OR NETTING	ACCORDING TO MANUFACTURER RECOMMENDATIONS	
POLYETHYLENE FILM CAN BE LAID OVER SENSITIVE AREAS AND STOCKPILES. MUST BE SECURED.		

Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

GRADING AND SHAPING

- GRADING AND SHAPING MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENT.
- WHEN CONVENTIONAL SEEDING AND FERTILIZING ARE TO BE DONE, GRADE AND SHAPE SHOULD BE FEASIBLE AND PRACTICAL, SO THAT EQUIPMENT CAN BE USED SAFELY AND EFFICIENTLY DURING SEEDBED PREPARATION, SEEDING, MULCHING AND MAINTENANCE OF THE VEGETATION.
- CONCENTRATIONS OF WATER THAT WILL CAUSE EXCESSIVE SOIL EROSION SHALL BE DIVERTED TO A SAFE OUTLET. DIVERSIONS AND OTHER TREATMENT PRACTICES SHALL CONFORM WITH THE APPROPRIATE STANDARDS AND SPECIFICATIONS.

LIME AND FERTILIZER RATES AND ANALYSIS

- AGRICULTURAL LIME IS REQUIRED AT THE RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING PERENNIAL VEGETATION, ADDITIONAL LIME IS NOT REQUIRED. AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.
- LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE." GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 90 PERCENT OF THE MATERIAL WILL PASS THROUGH A 10-MESH SIEVE, NOT LESS THAN 50 PERCENT WILL PASS THROUGH A 50-MESH SIEVE AND NOT LESS THAN 25 PERCENT WILL PASS THROUGH A 100-MESH SIEVE. FAST-ACTING LIME SPREAD BY HYDRAULIC SEEDING EQUIPMENT SHOULD BE "FINELY GROUND LIMESTONE" SPANNING FROM THE 180 MICRON SIZE TO THE 5 MICRON SIZE. FINELY GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 95 PERCENT OF THE MATERIAL WILL PASS THROUGH A 100-MESH SIEVE.
- IT IS DESIRABLE TO USE DOLOMITIC LIMESTONE IN THE SAND HILLS, SOUTHERN COASTAL PLAIN AND ATLANTIC COAST FLATWOODS MLRAS.
- AGRICULTURAL LIME IS GENERALLY NOT REQUIRED WHERE ONLY TREES ARE PLANTED.

LIME AND FERTILIZER APPLICATION

- WHEN HYDRAULIC SEEDING EQUIPMENT IS USED, THE INITIAL FERTILIZER SHALL BE MIXED WITH SEED, INNOCULANT (IF NEEDED), AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH AND APPLIED IN A SLURRY. THE INNOCULANT, IF NEEDED, SHALL BE MIXED WITH THE SEED PRIOR TO BEING PLACED INTO THE HYDRAULIC SEEDER. THE SLURRY MIXTURE WILL BE AGITATED DURING APPLICATION TO KEEP THE INGREDIENTS THOROUGHLY MIXED. THE MIXTURE WILL BE SPREAD UNIFORMLY OVER THE AREA WITHIN ONE HOUR AFTER BEING PLACED IN THE HYDROSEEDER.
- FINELY GROUND LIMESTONE CAN BE APPLIED IN THE MULCH SPREAD OR IN COMBINATION WITH THE TOP DRESSING. WHEN CONVENTIONAL PLANTING IS TO BE DONE, LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY IN ONE OF THE FOLLOWING WAYS:
 - APPLY BEFORE LAND PREPARATION SO THAT IT WILL BE MIXED WITH THE SOIL DURING SEEDBED PREPARATION.
 - MIX WITH THE SOIL USED TO FILL THE HOLES, DISTRIBUTE IN FURROWS.
 - BROADCAST AFTER STEEP SURFACES ARE SCARIFIED, PITTED OR TRENCHED.
 - A FERTILIZER PELLET SHALL BE PLACED AT ROOT DEPTH IN THE CLOSING HOLE BESIDE EACH PINE TREE SEEDLING.

Ds4 DISTURBED AREA STABILIZATION (WITH SODDING)

SOD MAINTENANCE AND INSTALLATION

SOD LAYOUT AND PREPARATION

INCORRECT **CORRECT**

DIRECTIONS FOR INITIAL MAINTENANCE

- ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.
- WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.
- MOW WHEN THE SOD IS ESTABLISHED -- IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

APPEARANCE OF GOOD SOD

SHOOTS OR GRASS BLADES: GRASS SHOULD BE GREEN AND HEALTHY, MOWED AT A 2"-3" CUTTING HEIGHT.

THATCH: GRASS CLIPPINGS AND DEAD LEAVES (UP TO 1/2" THICK).

ROOT ZONE: SOIL AND ROOTS SHOULD BE 1/2"-3/4" THICK WITH DENSE ROOT MAT FOR STRENGTH.

RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA - NO WELL DEFINED CHANNEL

NOTES:

- Lo IS THE LENGTH OF THE RIPRAP APRON.
- D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
- IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
- A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

GRADING AND SHAPING

- EXCESSIVE WATER RUNOFF SHALL BE REDUCED BY PRACTICES SUCH AS CLOSED DRAINAGE, DITCHES, DIVERSIONS, AND OTHERS.
- NO SHAPING OR GRADING IS REQUIRED IF SLOPES CAN BE STABILIZED BY HAND-SEEDING VEGETATION OR IF HYDRAULIC SEEDING EQUIPMENT IS TO BE USED.

SEEDBED PREPARATION

- WHEN A HYDRAULIC SEEDER IS USED, SEEDBED PREPARATION IS NOT REQUIRED. WHEN USING CONVENTIONAL OR HAND SEEDING, SEEDBED PREPARATION IS NOT REQUIRED IF THE SOIL MATERIAL IS LOOSE AND NOT SEALED BY RAINFALL.
- WHEN SOIL HAS BEEN SEALED BY RAINFALL OR CONSISTS OF SMOOTH CUT SLOPES, THE SOIL SHALL BE PITTED, TRENCHED OR OTHERWISE SCARIFIED TO PROVIDE A PLACE FOR SEED TO LODGE AND GERMINATE.

LIME AND FERTILIZER

- SOIL TESTS MUST BE PERFORMED DETERMINE THE REQUIRED AMOUNTS OF FERTILIZER, LIME, AND OTHER AMENDMENTS. SOIL TESTS SHOULD INCLUDE RECOMMENDATIONS FOR APPLICATION RATES.
- APPLY AGRICULTURAL LIME AT A RATE DETERMINED BY SOIL TEST FOR PH. QUICK ACTING LIME SHOULD BE INCORPORATED TO MODIFY PH DURING THE GERMINATION PERIOD.
- ALL GRADED AREAS REQUIRE LIME APPLICATION UNLESS SOIL TEST INDICATE OTHERWISE.
- BIOSTIMULANTS SHOULD ALSO BE CONSIDERED WHEN THERE IS LESS THAN 3% ORGANIC MATTER IN THE SOIL.
- FERTILIZER SHOULD BE APPLIED BEFORE SEEDBED PREPARATION AND INCORPORATED WITH A DISK, ROLLER, OR CHISEL. ON SLOPES TOO STEEP FOR OR INACCESSIBLE TO EQUIPMENT, FERTILIZER SHALL BE HYDRAULICALLY APPLIED, PREFERABLY IN THE FIRST PASS WITH SEED AND SOME HYDRAULIC MULCH, THEN TOPPED WITH THE REMAINING REQUIRED APPLICATION RATE.

SEEDING

SELECT A GRASS OR GRASS-LEGUME MIXTURE SUITABLE TO THE AREA AND SEASON OF THE YEAR. SEED SHALL BE APPLIED UNIFORMLY BY HAND, CYCLOPEE SEEDER, DRILL, CUT/PACKER SEEDER, OR HYDRAULIC SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). DRILL OR CUT/PACKER SEEDERS SHOULD NORMALLY PLACE SEED ONE-QUARTER TO ONE-HALF INCH DEEP. APPROPRIATE DEPTH OF PLANTING IS TEN TIMES THE SEED DIAMETER. SOIL SHOULD BE "RAKED" LIGHTLY TO COVER SEED WITH SOIL IF SEED BY HAND.

MULCHING

TEMPORARY VEGETATION CAN, IN MOST CASES, BE ESTABLISHED WITHOUT THE USE OF MULCH. PROVIDED THERE IS LITTLE TO NO EROSION POTENTIAL. HOWEVER, THE USE OF MULCH CAN OFTEN ACCELERATE AND ENHANCE GERMINATION AND VEGETATION ESTABLISHMENT. MULCH WITHOUT SEEDING SHOULD BE CONSIDERED FOR SHORT TERM PROTECTION. REFER TO DS1 - DISTURBED AREA STABILIZATION (Dd1).

IRRIGATION

DURING TIMES OF DROUGHT, WATER SHALL BE APPLIED AT A RATE NOT CAUSING RUNOFF AND EROSION. THE SOIL SHALL BE THOROUGHLY WETTED TO A DEPTH THAT WILL INSURE GERMINATION OF THE SEED. SUBSEQUENT APPLICATIONS SHOULD BE MADE WHEN NEEDED.

Ds5 DUST CONTROL ON DISTURBED AREAS

REFER TO THE POLLUTION CONTROL NOTES FOR RECOMMENDED SEQUENCE AND PRACTICE OF DUST CONTROL MEASURES.

TEMPORARY METHODS

- APPLICATION OF MULCH (SEE Ds1)
- TEMPORARY VEGETATIVE COVER (SEE Ds2)
- SPRAY ON ADHESIVES (SEE T60)
- TILLAGE: THE ROUGHENING OF SOIL AND BRING CLODS TO THE SURFACE. IT SHOULD BE USED AS AN EMERGENCY MEASURE BEFORE HIGH WIND EROSION POTENTIAL.
- EROSION CONTROL: SPRINKLE WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.
- BARRIERS: SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, BALES OF HAY, AND SIMILAR MATERIALS TO BE PLACED TO RIGHT ANGLES OF PREVAILING CURRENTS. TO BE EFFECTIVE, BARRIERS MUST BE AT INTERVALS OF APPROX. 15 TIMES THEIR HEIGHT.
- CALCIUM CHLORIDE APPLICATION - APPLY AS NEEDED TO KEEP SURFACE MOIST.

PERMANENT METHODS

- PERMANENT VEGETATION - (SEE Ds3)
- TOPSOILING - COVER WITH LESS EROSION TOPSOIL
- STONE - COVER AREAS SUBJECT TO WIND EROSION AND HIGH TRAFFIC AREAS WITH CRUSHED STONE OR COARSE GRAVEL.

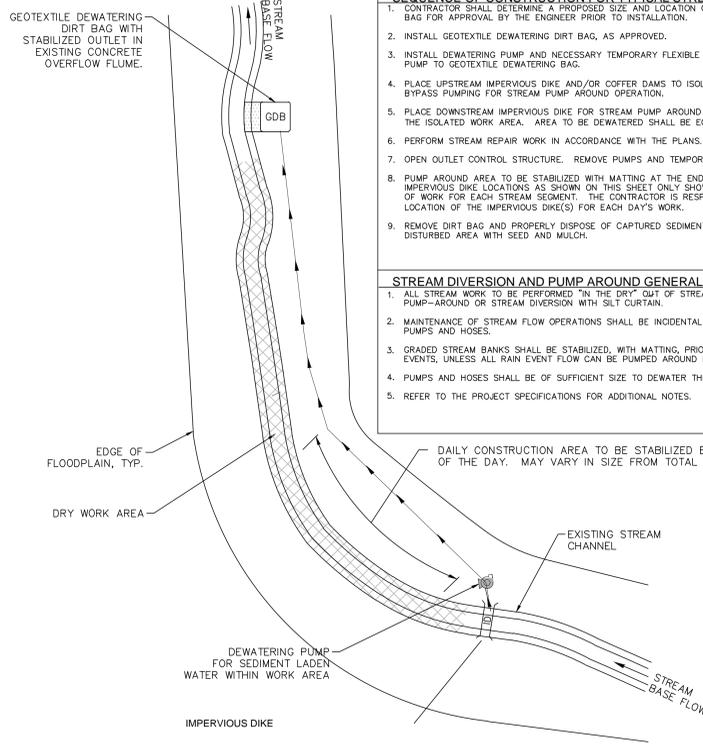
PIPE OUTLET TO WELL DEFINED CHANNEL

NOTES:

- Lo IS THE LENGTH OF THE RIPRAP APRON.
- D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
- IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
- A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

REGISTERED PROFESSIONAL ENGINEER
 ERIC BYRNE
 No. 000068887
 JOHN BYRNE

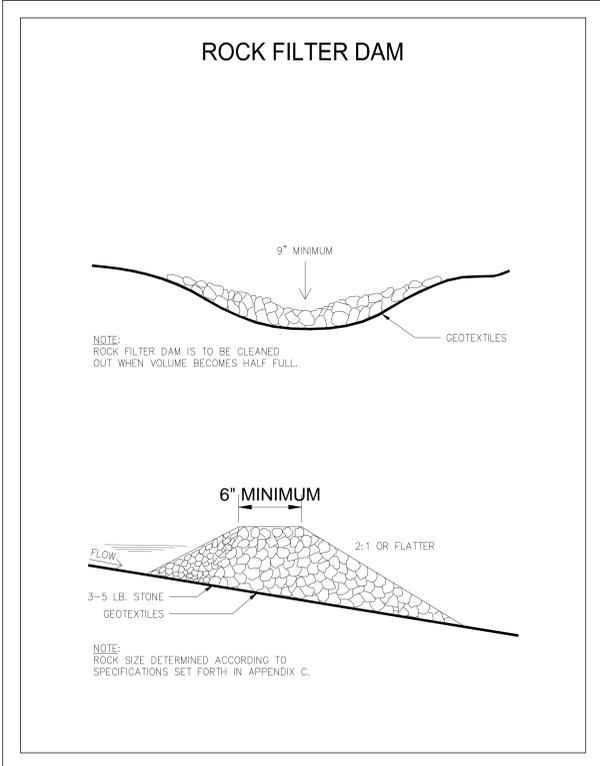
GSWCC CERT. (LEVEL II)
 000068887
 DRAWN BY NF
 DESIGNED BY PB
 REVIEWED BY EB
 DATE 07/05/2024
 PROJECT NO. 017983000
 TITLE **EROSION CONTROL DETAILS**
 SHEET NUMBER **C5-80**



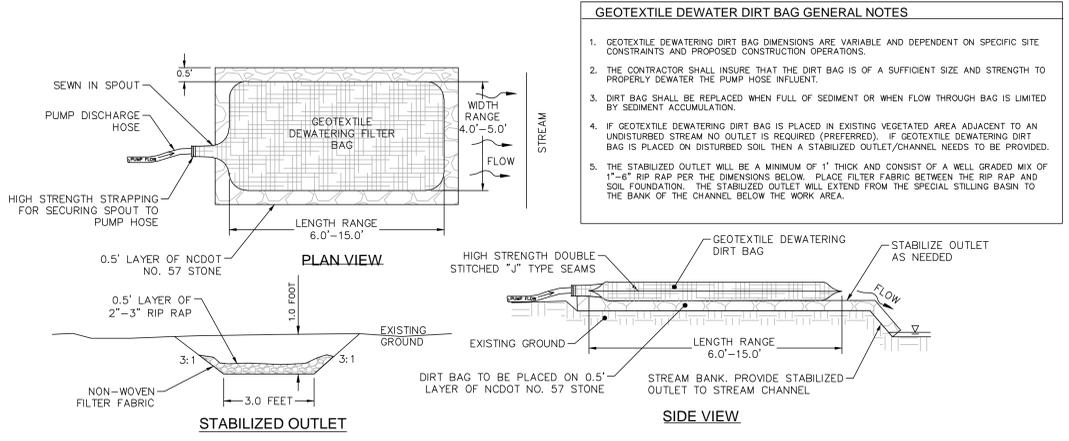
- SEQUENCE OF CONSTRUCTION FOR TYPICAL STREAM WORK AREA**
1. CONTRACTOR SHALL DETERMINE A PROPOSED SIZE AND LOCATION OF GEOTEXTILE DEWATERING DIRT BAG FOR APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.
 2. INSTALL GEOTEXTILE DEWATERING DIRT BAG, AS APPROVED.
 3. INSTALL DEWATERING PUMP AND NECESSARY TEMPORARY FLEXIBLE HOSE. CONNECT DEWATERING PUMP TO GEOTEXTILE DEWATERING BAG.
 4. PLACE UPSTREAM IMPERVIOUS DIKE AND/OR COFFER DAMS TO ISOLATE THE WORK AREA. BEGIN BYPASS PUMPING FOR STREAM PUMP AROUND OPERATION.
 5. PLACE DOWNSTREAM IMPERVIOUS DIKE FOR STREAM PUMP AROUND OPERATION. BEGIN DEWATERING THE ISOLATED WORK AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
 6. PERFORM STREAM REPAIR WORK IN ACCORDANCE WITH THE PLANS.
 7. OPEN OUTLET CONTROL STRUCTURE. REMOVE PUMPS AND TEMPORARY FLEXIBLE HOSE.
 8. PUMP AROUND AREA TO BE STABILIZED WITH MATTING AT THE END OF EACH WORK DAY. THE IMPERVIOUS DIKE LOCATIONS AS SHOWN ON THIS SHEET ONLY SHOW THE UPPER AND LOWER EXTENT OF WORK FOR EACH STREAM SEGMENT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKE(S) FOR EACH DAY'S WORK.
 9. REMOVE DIRT BAG AND PROPERLY DISPOSE OF CAPTURED SEDIMENT AND DIRT BAG. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

- STREAM DIVERSION AND PUMP AROUND GENERAL NOTES**
1. ALL STREAM WORK TO BE PERFORMED "IN THE DRY" OUT OF STREAM FLOW EITHER BY PUMP-AROUND OR STREAM DIVERSION WITH SILT CURTAIN.
 2. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES PUMPS AND HOSES.
 3. GRADED STREAM BANKS SHALL BE STABILIZED, WITH MATTING, PRIOR TO PREDICTED RAIN FALL EVENTS, UNLESS ALL RAIN EVENT FLOW CAN BE PUMPED AROUND FOR PREDICTED EVENT.
 4. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.
 5. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL NOTES.

PUMP-AROUND OPERATION



ROCK FILTER DAM



- GEOTEXTILE DEWATER DIRT BAG GENERAL NOTES**
1. GEOTEXTILE DEWATERING DIRT BAG DIMENSIONS ARE VARIABLE AND DEPENDENT ON SPECIFIC SITE CONSTRAINTS AND PROPOSED CONSTRUCTION OPERATIONS.
 2. THE CONTRACTOR SHALL INSURE THAT THE DIRT BAG IS OF A SUFFICIENT SIZE AND STRENGTH TO PROPERLY DEWATER THE PUMP HOSE INFLUENT.
 3. DIRT BAG SHALL BE REPLACED WHEN FULL OF SEDIMENT OR WHEN FLOW THROUGH BAG IS LIMITED BY SEDIMENT ACCUMULATION.
 4. IF GEOTEXTILE DEWATERING DIRT BAG IS PLACED IN EXISTING VEGETATED AREA ADJACENT TO AN UNDISTURBED STREAM NO OUTLET IS REQUIRED (PREFERRED). IF GEOTEXTILE DEWATERING DIRT BAG IS PLACED ON DISTURBED SOIL THEN A STABILIZED OUTLET/CHANNEL NEEDS TO BE PROVIDED.
 5. THE STABILIZED OUTLET WILL BE A MINIMUM OF 1" THICK AND CONSIST OF A WELL GRADED MIX OF 1"-8" RIP RAP PER THE DIMENSIONS BELOW. PLACE FILTER FABRIC BETWEEN THE RIP RAP AND SOIL FOUNDATION. THE STABILIZED OUTLET WILL EXTEND FROM THE SPECIAL STILLING BASIN TO THE BANK OF THE CHANNEL BELOW THE WORK AREA.

GEOTEXTILE DEWATERING DIRT BAG

SEDIMENT STORAGE CALCULATIONS

TOTAL LIMITS OF DISTURBANCE: 0.55 ACRES X 67 CY/AC = 37 CY OF SEDIMENT STORAGE NEEDED

SILT FENCE SEDIMENT STORAGE:
 SEDIMENT STORAGE CAN BE COMPUTED FOR UP TO 1/2 OF THE HEIGHT OF SILT FENCE. AT 2:1 SLOPE, THERE IS 2.5 OF AVAILABLE LENGTH BEHIND SILT FENCE TO ALLOW SEDIMENT STORAGE.
 1.25' D X 2.5/2 = 1.56 SF OF SEDIMENT STORAGE PER LINEAR FT OF SILT FENCE
 THERE IS A TOTAL OF 386 LF OF SILT FENCE ON SITE
 1.56 SF X 386 LF = 602 CF OR 22.3 CY OF SEDIMENT STORAGE PROVIDED BY THE SILT FENCE.

ROCK FILTER DAM SEDIMENT STORAGE:
 SEDIMENT IS ALLOWED TO STAGE UP TO 1/2 THE HEIGHT OF THE DAM BEFORE BEING REMOVED. THIS ALLOWS FOR 2.5 FT OF SEDIMENT TO STAGE UP BEHIND THE ROCK DAM WHICH EQUATES TO STORAGE EXTEND 7.5FT BEYOND THE ROCK DAM.
 2.5' D X 7.5/2 = 9.4 SF OF SEDIMENT FOR EVERY LINEAR FOOT OF ROCK DAM
 9.4 SF X 50 LF = 468.75 CF OR 17.36 CY

TOTAL SEDIMENT STORAGE FOR THE SITE IS:
 17.36 CY + 22.30 CY = 39.7 CY

NO.	REVISION DESCRIPTIONS	DATE	BY
1	100% CONSTRUCTION DOCUMENTS	06/17/2024	NF
2	100% CONSTRUCTION DOCUMENTS	06/20/2024	NF
3	REVISION 01	07/05/2024	NF



GSWCC CERT. (LEVEL II) 0000068887
 DRAWN BY NF
 DESIGNED BY PB
 REVIEWED BY EB
 DATE 07/05/2024
 PROJECT NO. 017983000

GSWCC Georgia Soil and Water Conservation Commission
ERIC BYRNE
 Level II Certified Design Professional
 0000068887
 ISSUED: 07/09/2023 EXPIRES: 07/09/2025

EROSION CONTROL DETAILS
 SHEET NUMBER
C5-81

final : FOR CONSTRUCTION